REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

FORMER BAYLINER MARINE
17825 59TH AVENUE NE
ARLINGTON, WASHINGTON 98223

April 12, 2011

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ARLINGTON, WASHINGTON 98223

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1.0 INTRODUCTION

This report presents a Remedial Investigation (RI) and Feasibility Study (FS) addressing contamination discovered beneath the former Bayliner Marine property located at 17825 59th Avenue NE, Arlington, Snohomish County, Washington 98223 (the "Site"). The only contamination found at the Site above applicable cleanup levels is an area of shallow groundwater impacted with Tetrachloroethylene (PCE). This RI describes the contamination known to be present, available information about the source of the PCE, the previous investigations completed to define the nature and extent of PCE in the impacted area, and the potential routes of exposure and human health risk resulting from the contamination. The FS identifies and analyzes several potential alternatives for cleanup actions, evaluates the technical feasibility, effectiveness, protectiveness and cost of each alternative, and identifies the preferred remedial alternative.

The RI and FS have been prepared pursuant to requirements under the Washington Model Toxics Cleanup Act (MTCA), as outlined in Washington Administrative Code (WAC) Chapter 173-340-350.

Previous investigations conducted at the Site have identified the presence of PCE in shallow groundwater at concentrations ranging from 5 to 59 micrograms per liter (µg/L). Several of the detected concentrations exceed the Method A Groundwater Cleanup Level (CUL) of 5 µg/L established under the Washington Model Toxics Control Act (MTCA), but are relatively low when compared to concentrations frequently found in industrial settings where groundwater has been impacted by PCE. The area of groundwater exhibiting detectable levels of PCE is limited within the boundaries of the former Bayliner Marine property, and is also limited vertically to depths ranging between 15 and 22 feet below ground surface (bgs).

1.1 SUBJECT PROPERTY DESCRIPTION

The former Bayliner Marine property is a 32.8-acre industrial site developed with three office buildings and 13 industrial buildings constructed between 1969 and 1996. The subject property also includes employee parking lots, boat storage areas, and three stormwater retention ponds. The Subject Property operated as a fiberglass boat manufacturing facility from 1968 until operations ceased in December 2008. Prior to 1968, the Site consisted of undeveloped land.

Figure 1 in Appendix A depicts the location of the subject property. Figure 2 presents a Site Plan of the subject property.

2.0 REMEDIAL INVESTIGATION

Results of the Remedial Investigation are presented in detail in four reports previously prepared by Stantec and submitted to the Washington Department of Ecology (Ecology):

- Phase I Environmental Site Assessment Report, dated April 3, 2009
- Phase II Environmental Site Assessment Report, dated June 25, 2009
- Environmental Site Investigation Report, dated December 23, 2009
- Additional Site Characterization Report, dated April 9, 2010

The following presents a summary of the information in these reports. The full original reports are incorporated, by reference, into this RI.

2.1 OVERVIEW OF PRIOR INVESTIGATIONS

2.1.1 Phase I ESA – April 2009

Brunswick Corporation, the property owner, retained Stantec to complete the Phase I Environmental Site Assessment (ESA) in anticipation of the potential sale of the property. Based on a review of historical records about the property, the Phase I ESA Report identified the following Recognized Environmental Conditions (RECs) associated with the subject property:

- Wastewater discharges from the facility were originally directed to two septic systems with leach fields on the subject property. All wastewater from the facility went to the on-site septic systems from 1968 until at least 1987. Bayliner buildings were gradually connected to the municipal sanitary sewer system between 1987 and 2005. Chemical waste constituents that may have been present in the wastewater discharges had the potential to migrate from the leach fields to subsurface soil and groundwater beneath the subject property.
- All stormwater catch basins and trench drains on the property discharged the collected stormwater to a series of three retention ponds along the southern boundary of the subject property. As such, there was a potential that chemical or petroleum contaminants that may have become entrained in stormwater runoff could have accumulated in sediments within the ponds or leached to underlying soil or groundwater.
- Ecology's underground storage tank (UST) database indicated that two USTs had been present on the subject property from 1964 until 1996. No other details about the location or fate of the tanks were located in records at the property or in files researched at the

City of Arlington Fire Department. There was a potential that petroleum leaks or spills that may have resulted from the operation of the tank systems could potentially cause contamination of subsurface soil or groundwater.

2.1.2 Phase II ESA – June 2009

In response to the results of the Phase I ESA, Brunswick Corporation directed Stantec to complete a Phase II ESA to further evaluate the potential presence or absence of impacted soil, sediment or groundwater associated with the RECs discussed above. Key findings of the Phase II ESA are summarized below:

Former Underground Storage Tanks. Mr. Tad Blankenbaker, site manager at the Bayliner Marine facility, reported that he had worked at the subject property for 20 years, and that the USTs had been formerly located in the area just north of Building #11. Stantec also reviewed files pertaining to the former USTs at the Northwest Region office of the Ecology in Bellevue, Washington. Ecology's records indicated that one 5,000-gallon aviation gasoline UST and one 9,000-gallon Jet-A UST were removed from the ground in April 1989. No further documentation, such as results of soil sampling conducted at the time of the removal, was present in the Ecology files.

Sampling of Soil, Groundwater and Pond Sediment. In May 2009, soil borings were completed using a hollow-stem auger drilling rig at seven locations (B-1 through B-7) selected to evaluate potential impacts from the areas of concern identified as RECs in the Phase I report. Locations of the Phase II ESA borings are depicted on Figure 2 in Appendix A. Samples of soil and groundwater from each location were collected for laboratory analyses. To evaluate potential accumulations of contamination in the three on-site retention ponds, Stantec collected surface sediment samples from the bottom of each pond.

The Phase II ESA identified an area of shallow groundwater impacted with PCE at concentrations above the MTCA Method A Groundwater CUL. The highest reported concentration of PCE was 42 µg/L at B-4, located in the area of a former septic system leach field near the southeast corner of Building #11. At B-5, approximately 200 feet northwest in the presumed downgradient direction from B-4, the reported PCE concentration was 31 µg/L. At B-6, which is near the northern property boundary approximately 800 feet in the presumed downgradient direction from B-4, the PCE concentration was 18 µg/L. Based on the data generated in this preliminary investigation, the lateral extent of PCE impact to the east and west appeared to be limited. No other VOCs were detected in the collected groundwater samples. No Semi-Volatile Organic Compounds (SVOCs) were detected in any of the groundwater samples.

The analytical results did not identify any compounds in soil at concentrations exceeding Method A Soil CUL for Unrestricted Site Use. Based on results of the Phase II ESA, there is no evidence of impact from the former USTs, or from stormwater discharges to the on-site retention

ponds. The presence of PCE in shallow groundwater was the only impact identified during the Phase II ESA that warranted further investigation.

2.1.3 Environmental Site Investigation – December 2009

Five groundwater monitoring wells (MW-1 through MW-5) were constructed to further characterize and confirm the Phase II findings. PCE was detected in groundwater at concentrations exceeding the MTCA Method A Groundwater CUL at MW-1 (near Building 11 in the south-center of the site) and at MW-4 (near the north-central perimeter of the facility). TCE was also detected in groundwater at MW-4. No VOCs were detected in groundwater at the other three well locations.

PCE was detected in soil at MW-1 and MW-4, at concentrations below the MTCA Method A Cleanup Level for residential soils. Consequently, further evaluation of PCE in soils at these locations was not warranted.

2.1.4 Additional Site Characterization – February-March 2010

To further delineate the extent of PCE impact in groundwater, the following additional investigations were conducted in February, March and April 2010, with results presented in the April 2010 Additional Site Characterization report:

- Groundwater monitoring wells MW-6 and MW-7 were constructed on February 17, 2010.
- Soil borings B-8 and B-9 were constructed on February 18, 2010 and temporary monitoring wells were installed to facilitate groundwater sampling.
- Groundwater samples were collected on February 18, 2010 from monitoring wells MW-1 through MW-7 and from the temporary wells at B-8 and B-9.
- Seven additional soil borings were completed as temporary wells on March 19, 2010, and groundwater samples were collected.

The results of the February-March 2010 groundwater sampling confirmed that the area of PCE-impacted groundwater was limited to a fairly narrow band between MW-1 and MW-4, with the highest PCE concentrations found in the area of Building 11 (MW-1) in the south-central portion of the property.

2.2 ONGOING GROUNDWATER MONITORING

A quarterly groundwater monitoring program was initiated in May 2010 for the seven existing on-site monitoring wells. Gauging and sampling of the seven wells took place on May 26, 2010, September 9, 2010, and December 21, 2010. During each monitoring event, static water levels in each well were measured using an electronic water-level indicator and recorded to the

nearest 0.01 foot. After gauging, each well was purged using a peristaltic pump and USEPA-approved low-flow techniques (removing less than 0.5 liter per minute) while monitoring parameters of color, pH, temperature and conductivity. Purged groundwater was placed into a DOT-approved 55-gallon steel drum for temporary on-site storage pending results of laboratory sample analyses. Static water level measurements and purging parameters are included in the Groundwater Sampling Data Sheets in Appendix C.

Details of monitoring well construction (e.g., total depth and screened interval), static water level measurements, and calculated potentiometric surface elevations are summarized in Table 1 in Appendix B for the period of December 2009 through December 2010. Figure 3 in Appendix A depicts the December 2010 potentiometric surface elevation contours and inferred groundwater flow direction. Measured groundwater flow direction has been generally consistent through all previous monitoring events.

Following purging, groundwater samples were collected from each well using a peristaltic pump fitted with dedicated polyethylene tubing. Samples were decanted directly into clean, laboratory-supplied sample containers. The containers were immediately closed and labeled with a unique sample ID number, and placed into a cooler with ice for shipment to the project laboratory. Samples were maintained under chain-of-custody documentation until delivery to the laboratory.

The samples were shipped to Environmental Science Corporation (ESC) laboratories in Mt. Juliet, Tennessee for analysis of volatile organic compounds (VOCs) by USEPA Method 8260B. One quality control duplicate sample and one trip blank sample were also submitted for analysis to facilitate QA/QC evaluation.

PCE was the only VOC detected in any of the groundwater samples. PCE was present in the samples from MW-1 at concentrations ranging from 43 to 50 micrograms per liter (µg/L). Measured PCE concentrations at MW-1 have remained fairly consistent through all five monitoring events, and exceeds the MTCA Method A Groundwater CUL of 5 µg/L.

A PCE concentration of 13 µg/L was measured in the initial sampling event at MW-4 in December 2009. Lower concentrations were measured in the four subsequent sampling events, ranging from 5.0 to 7.7 µg/L, just slightly exceeding the MTCA Method A Groundwater CUL. PCE was not detected above the laboratory's method reporting limit (MRL) in any of the other groundwater samples.

PCE concentrations in the duplicate samples from MW-1 have been consistent with the results from the primary sample. VOCs were not detected above the laboratory MRLs in the trip blank. The samples were analyzed at the laboratory within the required holding time for the analytical method, and surrogate recovery and other QA/QC parameters appear to have been within appropriate limits.

Laboratory analytical results from the all groundwater sampling events to date are presented in Table 2 in Appendix B.

2.3 VAPOR INTRUSION RISK SCREENING

Site soil and groundwater data were compared to vapor intrusion screening levels being considered by Ecology as identified in the draft "Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action" (SVI Guidance). The initial screening determined that the highest PCE concentrations in groundwater at the site exceeded generic groundwater screening levels for vapor intrusion risks for PCE.

To further assess the potential for vapor intrusion concerns, the USEPA Johnson & Ettinger model was used to predict maximum concentrations of PCE in indoor air. The results of the modeling showed that cumulative excess cancer risk (ECR) for PCE using a model-defined hypothetical residential building exceeded the lower bound of the discretionary risk range (an ECR of 1×10^{-6}). The predicted indoor air concentration of 12.3 micrograms per cubic meter ($\mu g/m^3$) would exceed the Method B (0.42 $\mu g/m^3$) and Method C (4.2 $\mu g/m^3$) indoor air cleanup levels identified in the draft SVI Guidance. The draft SVI Guidance indicates Method B is intended for residential settings, and Method C is intended for industrial settings. Although these calculations suggest a potential for vapor intrusion, they employ numerous conservative assumptions and likely overestimate the potential vapor intrusion risk. For example the model uses a conservative assumption of residential property use, however, the current and anticipated future use of the property is industrial. Further, the risk evaluation is based upon an assumed continuous exposure to the maximum concentration of PCE over the entire exposure duration, without considering possible reductions in contaminant concentrations over time, or that much lower concentrations of PCE were detected throughout the property.

PCE was detected in a sub-slab soil vapor sample collected beneath the floor of Building 11 in March 2010 at a concentration of 2,700 $\mu g/m^3$. Using conservative default factors to estimate attenuation of the vapor through the floor slab, this concentration suggested a need to sample indoor air to determine if a potential existed for PCE to exceed the Method B and Method C levels identified in the draft SVI Guidance. Details of this evaluation were provided in the April 2010 Additional Site Characterization report.

In April 2010, two indoor air samples were collected in Building 11, and one indoor air sample each was collected from Buildings #4, #8, #10, #14 and #17. The samples were submitted to Air Toxics, Ltd. Laboratory of Folsom, California for analysis of selected VOCs by USEPA Method TO-15 (GC/MS SIM). PCE was not detected above the laboratory MRL of 0.21 $\mu g/m^3$ in four of the seven samples. PCE was detected in the two samples from Building #11 at concentrations that were below the proposed CUL established under MTCA Method B (0.42 $\mu g/m^3$). The highest PCE concentration (1.2 $\mu g/m^3$), reported for the sample from Building #14, is above the proposed Method B CUL of 0.42 $\mu g/m^3$ for residential settings, but below the proposed Method C CUL of 4.2 $\mu g/m^3$ for industrial settings.

Laboratory analytical reports for the indoor air samples are provided in Appendix D.

2.4 PROPERTY DEVELOPMENT AND HISTORY

Historic uses of the subject property and adjoining properties are described in detail in the March 2009 Phase I ESA report. The subject property was undeveloped land prior to 1968, when it was developed as a fiberglass boat manufacturing plant. Building #4, constructed in 1969, was the first manufacturing building on the site. Other buildings were added between 1971 and 1996. The facility operated continuously as a fiberglass boat manufacturing plant from 1968 to 2008.

According to the City of Arlington Development Services office, the property has a current zoning designation of GI (general industry). Potable water is supplied to the site by the City of Arlington, and electrical power is serviced by Snohomish Public Utility District.

Floor trench drains are present in Buildings #3, #4 and #10. According to Bayliner facility personnel, these drains discharge to the retention ponds on the south side of the property. Exterior stormwater drains from around the property also are routed to the retention ponds. Sanitary sewage from sinks and toilets within the buildings originally discharged to two on-site septic systems. Maps reviewed in the records of the Snohomish County Health Department depict the septic leach field locations to be as shown on Figure 2 in Appendix A. One of the leach fields was located between Building #6 and Building #12. The other was just outside the southeast corner of Building #11. According to a sewer permit technician with the City of Arlington, the septic systems were decommissioned and the subject property buildings were gradually connected to the municipal sanitary sewer between 1987 and 2005.

The subject property is located in an area of moderately dense industrial and commercial development. It is bordered on the north by 180th Street NE. Across 180th Street are three parcels:

- Across the street from the northwest portion of the property is Campbell and Neilson Auto Wrecking (18021 59th Avenue NE). According to reasonably ascertainable records, this area was undeveloped land prior to construction of the auto wrecking facility in the late 1990s.

- Land across the street from the north-central portion of the subject property is and has always been undeveloped.

- Across the street from the northeast portion of the subject property is undeveloped land that is part of the Stella-Jones wood preserving plant (6520 188th Street NE). The undeveloped land covers approximately 28 acres known as Parcel B. Portions of Parcel B have historically been used by Stella-Jones for storage of untreated wood and for pole peeling. No wood treating has ever occurred on Parcel B. The Stella-Jones facility treats telephone and power poles using a pressure-treating process with a solution of 5

percent pentachlorophenol (PCP) in a base oil carrier. An alternate treatment process using Copper Naphthanate was added to the facility in approximately 2002-2003. The pole treatment operations are located in the northern part of the Stella-Jones facility, more than 1,500 feet north of the subject property. The wood treating facility began operation in the mid-1960s.

The subject property is bordered on the east by a currently vacant former manufacturing building (address and former tenants unknown). Further to the east are a Burlington Northern Railroad line, smaller commercial structures, and 67th Avenue NE. A residential neighborhood beyond 67th Avenue to the east was developed beginning in the late 1980s. The adjoining land to the south is and has always been undeveloped.

To the west of the subject property is 59th Avenue NE. The Arlington Municipal Airport has been present across the street to the west since the mid-1950s.

2.5 PHYSIOGRAPHIC SETTING OF PROPERTY

According to the USGS 7.5-minute topographic map for the Smokey Point, Washington quadrangle (1981), the subject property is situated at an elevation of approximately 133 feet above mean sea level (MSL). The general topographic gradient in the vicinity is toward the northwest. The area to the north, south and west is relatively flat, sloping downward slightly toward the Stillaguamish River approximately 1.4 miles to the northwest. However, an area of low hills rise steeply just to the east of the subject property, reaching to ridges of up to 350 feet above MSL within less than one-half-mile.

The subject property is underlain by Lynnwood loamy sand soils. Lynwood soils have generally high infiltration rates and are considered to be well-drained to excessively-drained sands and gravels. The nearest surface water bodies are the Middle Fork of Quilceda Creek, approximately 0.4 miles south of the subject property, and Portage Creek about 1.1 mile north of the subject property. According to the U.S. Fish & Wildlife Service National Wetlands Mapper (http://www.fws.gov/wetlands/Data/Mapper.html), the nearest identified wetland areas are approximately 0.75 miles southeast and 1.5 miles northwest of the subject property.

2.6 GEOLOGIC/HYDROGEOLOGIC SETTING

Observed subsurface soils in the subject property borings consist of fine-to-coarse-grained sand with traces of gravel. Similar soil conditions were noted at all depth intervals in all of the borings, with the only noticeable difference being slight variation in the amount of gravel. Static water levels (SWL) recorded in well monitoring events in December 2009, February 2010 and May 2010 are provided in Table 1 in Appendix B. Measured SWL has ranged between 15 and 22 feet bgs. Variation in SWL over that time has been between 2 to 3 feet.

Top-of-casing elevations surveyed for each well have been used to determine the relative potentiometric surface elevation at each well location, the average gradient across the site, and

the direction of groundwater flow. Groundwater flow direction has been toward the west-northwest, with the gradient ranging from 0.0034 feet per foot (ft/ft) in December 2009 to 0.0029 ft/ft in February and May 2010. Figure 3 in Appendix A presents potentiometric surface elevation contours and inferred groundwater flow direction from May 2010.

Water well logs reviewed at the Department of Ecology web site (http://apps.ecy.wa.gov/welllog/scripts/mapresults3.asp) identified approximately 136 wells within a 0.5 mile radius of the subject property. The majority of the wells were located upgradient (60) or cross-gradient (60) from the subject property. Of the 16 well logs from the downgradient quadrant, 15 are listed in the ¼ section directly northwest of the subject property (T31N, R03E, Section 22, SE ¼ of the NW ¼). Fourteen of those are listed as resource protection wells (monitoring wells). One well is listed as a City of Arlington municipal water supply well, located approximately 1,500 feet north-northwest from the northwest corner of the subject property. The City well is reported to be 185 feet deep, with a screened interval between 151 and 181 feet bgs. According to the web site for the City of Arlington Department of Public Works, (http://www.ci.arlington.wa.us/documents/PW%20Utilities/annual%20water%20report%202007%20for%20web.pdf), the well supplies 2 percent of the City's overall water supply.

The physiographic features and rock units of the Arlington area represent the end product of a complex geologic process. The glacially derived sands and gravels of Pleistocene age are the most recent deposits in the area, and various units of this group serve as the major aquifers in the area1.

The Stillaguamish sand member is an outwash deposit which accumulated to a thickness of about 200 feet at a time when the melting ice temporarily blocked the river at the north end of Getchell Hill and caused the Stillaguamish drainage to pass southward through a spillway now followed by the Pilchuck River[2]. The deposits are largely fine sand and clay but contain much coarser material towards the top and especially around the margin opposite points of tributary-stream debouchments. Review of well logs[3] in the region confirms the presence of significant, discontinuous layers of clay within the sand aquifers.

The well construction log for the City of Arlington water supply well does not indicate the presence of a confining layer in the stratigraphy at the site. However, a layer of fine sand with yellow clay was logged from 103 to 112 feet bgs. This layer of sand and clay is below the shallow water bearing zone and above the well screen interval and lower water bearing unit. The continuity of this lower permeability layer is unknown.

[1] Report On The Geology And Ground-Water Resources Of The Arlington Heights, Snohomish County, Washington, Paul A. Eddy,1970 Open-File Technical Report 70-01

[2] Geology and Ore Deposits of the Sultan Basin, Snohomish County, Washington Bulletin No. 36 Ward Carithers and A. K. Guard, 1945

[3] Water well logs, Washington State Department of Ecology web site (http://apps.ecy.wa.gov/welllog/scripts/mapresults3.asp)

2.7 CONCEPTUAL SITE MODEL

This Conceptual Site Model (CSM) summarizes technical information about impacted media at the site and evaluates potential exposure routes. The CSM identifies:

- Area of concern
- Contaminants of concern
- Potential sources of contamination
- Potential migration pathways for contaminants of concern
- Potential environmental receptors

This CSM has been prepared in general accordance with the American Society for Testing and Materials (ASTM) Standard Guide E1689-95 (2003) *Developing Conceptual Site Models for Contaminated Sites*. The model is based on the data obtained in site investigations to date, as described in Sections 2.1 through 2.3. The CSM is dynamic and will be updated with additional information as it is obtained.

2.7.1 Area of Concern

The Area of Concern (AOC) is defined as the extent of shallow groundwater beneath the Bayliner property where PCE concentrations have been detected exceeding the MTCA Method A CUL of 5 µg/L. Site data indicates that the AOC is approximately 200 feet wide, extending south to north for approximately 800 feet between MW-1 and MW-4, and at depths ranging between 15 and 22 feet bgs.

PCE groundwater data is presented in Table 2 in Appendix B. The highest PCE concentrations have been found in the area of the former septic system leach field immediately south of Building #11 (MW-1, B-14 and B-15). VOCs have not been detected at the upgradient well (MW-3) located near the property boundary southeast of MW-1.

The eastern extent of the VOC plume has been defined by the low PCE concentrations at B-2 (1.5 µg/L) and B-3 (3.3 µg/L) and the absence of VOCs in the groundwater samples collected from MW-6, B-1, B12, B-9 and B-13. The western extent of the PCE impact is defined by the absence of PCE in samples from MW-2, MW-5, MW-7, B-7, B-8, B-10 and B-11.

The northern boundary of PCE impact extends to MW-4 where PCE in groundwater ranged from 13 µg/L in December 2009 to 5.0 µg/L in May 2010 to 7.7 µg/L in December 2010. PCE has not been detected at MW-7 located near the northern property boundary approximately 85 feet northwest of MW-4. Consequently, the data indicates that the downgradient reach of the VOC-impacted groundwater does not extend beyond the property line. In addition, PCE has not

been detected in MW-5 which is also located near the northern property boundary approximately 400 feet west of MW-4, nor B-8 which was located approximately 350 feet northwest of MW-4.

Depth discrete grab groundwater samples collected from borings (B-14 and B-16) placed downgradient of the suspected source area (former septic system leach field) were reported to contain detectable concentrations of PCE extending to a depth of approximately 36 feet bgs. No VOCs were detected in groundwater samples collected at a depth of 44-48 feet from B-14, and 46-50 feet from B-16.

Soil samples have been collected for laboratory analyses from 23 boring locations across the site. No VOCs, SVOCs, or metals were identified in any of those samples at concentrations that exceed the most stringent MTCA Method A soil CUL. Based on this data, there are no known areas of contaminated soil for which a cleanup action is warranted.

2.7.2 Contaminants of Concern

The initial rounds of investigation at the site analyzed soil, groundwater and retention pond sediment for the presence of VOCs, SVOCs, and RCRA metals. These were selected as parameters indicative of chemicals and waste products likely to have been present at the Bayliner facility. PCE in groundwater is the only compound identified at the site at concentrations exceeding Method A CUL. TCE was detected at a concentration of 13 µg/L in the December 2009 groundwater sample collected from MW-4. However, TCE has not been detected in the subsequent sampling events at MW-4, nor in any other site monitoring wells. No other VOCs, SVOCs or metals were found in groundwater at concentrations above the Method A Groundwater Cleanup Level. No VOCs, SVOCs or metals concentrations were found that exceeded the Method A Residential Soil cleanup levels.

Consequently, this RI/FS and any future investigations at the site will focus on PCE in groundwater as the sole Contaminant of Concern.

2.7.3 Potential Sources of Contamination

The review of property history provided in the Phase I ESA report identified three potential sources of releases to the subsurface environment: the former underground fuel storage tanks, the three stormwater retention ponds, and the former two septic system leach fields. The soil and groundwater investigations did not find evidence of any releases from the fuel tanks. No VOCs, SVOCs, or metals were detected at concentrations above Method A residential soil cleanup levels in sediment samples collected from the retention ponds. However, PCE was identified in groundwater.

The highest concentrations of PCE in groundwater were found in the samples located near the former septic system leach field near Building #11 (MW-1 and B-4), with the next highest concentrations in the samples from the downgradient side of Building #11 (B-5, B-14, B-15).

The location of underground utility lines through the area of the former septic system leach field prevented the placement of soil borings directly into what is believed to be the exact location of the former septic system leach field. However, soil samples from the borings near the edge of the leach field (MW-1 and B-4) contained low concentrations of PCE (0.025 µg/L and 0.0049 µg/L, respectively) that appear more likely to represent capillary zone smearing of PCE from the groundwater than remnants of a historic subsurface PCE release to the leach field.

According to interviews with Bayliner facility personnel and representatives of Brunswick Corporation (owner of the Bayliner facility) there is no known history of PCE storage or use at the facility. PCE has not been an effective solvent for use with the fiberglass materials in the boat manufacturing process, and therefore is not typically used in, or present at, such facilities. The relatively low detected concentrations of PCE in groundwater suggest that the quantity of PCE released was small, and not related to routine use at the facility.

Although the origin of the PCE impacts cannot be confirmed in the absence of an identifiable point source in the soil, it is assumed that small quantities of PCE were used for a brief time at the facility. It appears possible that a small quantity of PCE could have been disposed into sink drains at the facility which discharged to the septic system leach field near Building #11, resulting in leaching of the contaminant into the underlying shallow groundwater.

The Bayliner facility began operations in 1968, and decommissioning of the septic systems at the site started in 1986. Thus, it is quite possible that the releases(s) of PCE occurred 25 to 40 years ago, and that impacts to soil in the leach field area have naturally degraded over time.

For purposes of this RI, the source area of the PCE contamination is considered to be the septic system leach field near the southeast corner of Building #11. As evidenced by the absence of residual soil impact, it is likely that PCE present in soil, if any, has attenuated over time to the point that cleanup actions for soil are now not warranted.

2.7.4 Affected Media

2.7.4.1 Groundwater

Groundwater beneath the former Bayliner facility is impacted with low concentrations of PCE which exceed the Method A Groundwater CUL of 5 µg/L. The highest concentration of PCE in groundwater at the site was 59 µg/L, as was detected in the sample collected from MW-1 in December 2009. MW-1 is located immediately adjacent to the presumed source area. The contaminated groundwater is estimated to exist at depths ranging between 15 and 22 feet bgs, over an area approximately 200 feet wide and extending south to north for approximately 800 feet between MW-1 and MW-4. The area of PCE impact is limited within the property boundaries of the former Bayliner facility.

2.7.4.2 Surface Water

With the exception of the three on-site retention ponds, there are no surface water bodies within 2,000 feet of the site. No contaminated media has been identified at the ground surface where contact with stormwater runoff is possible, and all on-site runoff is contained within the on-site retention ponds, with no discharge to off-site water bodies. As such, there is no known impact to surface water resulting from the presence of PCE at the Bayliner property.

2.7.4.3 Air

Migration of PCE by the air pathway can occur due to the solvent's high potential for volatilization from liquid to gas. One sub-slab soil gas sample collected in March 2010 beneath Building #11 indicated that PCE vapors had accumulated beneath the slab of the building. However, indoor air samples collected in April 2010 in Buildings #4, #8, #10, #11, #14 and #17 found that PCE concentrations in the indoor air were below the applicable indoor air CUL. Consequently, there is no apparent impact to indoor air as a result of the PCE-contaminated groundwater.

The entire Bayliner property is covered by buildings or paved surfaces, minimizing the risk for migration of PCE vapors to ambient outdoor air. A sample of ambient air was collected in April 2010 concurrent with the indoor air samples discussed above. PCE was detected at a low concentration of 0.33 µg/$m^{3.}$ The presence of PCE in ambient air cannot be attributed to subsurface PCE contamination due to the presence in the ambient air sample of low concentrations of other VOCs that are not present in the subsurface. Based on the ambient air sample data and the impervious surfaces across the site, there is no apparent impact to ambient air as a result of the PCE-contaminated groundwater.

2.7.4.4 Soil

Soil sampling conducted at the site has not identified the presence of PCE in soil at concentrations above the Method A CUL for Residential Soils. Consequently, there is no apparent PCE impact to soil at the site.

2.7.4.5 Sediment

Sampling of sediment from the bottom of the three on-site retention ponds did not identify the existence of PCE at concentrations exceeding the laboratory MRL. Surface sediment and dust are covered by paved surfaces throughout the rest of the site. Therefore, there is no known impact to sediment stemming from the presence of PCE at the site.

2.7.5 Environmental Receptors

2.7.5.1 Human Receptors

The former Bayliner facility is located in an area of predominantly industrial and commercial property use. The nearest residences are east of 67th Avenue, about 1,800 feet away (cross-gradient or upgradient) of the area of groundwater impact. Potential on-site or downgradient human receptors in the vicinity include on-site workers and visitors, construction workers for any future excavation activity associated with site redevelopment, and workers at off-site business locations.

Exposure of any on-site or potential off-site human receptor groups to the contaminated groundwater is unlikely, based on the following factors:

- Impacted groundwater is contained within the property boundaries;
- The absence of impacted soil;
- The absence of indoor air concentrations above MTCA criteria;
- The depth of the affected groundwater; and,
- The absence of any nearby pumping wells.

2.7.5.2 Ecological Receptors

The former Bayliner facility is located in an area of commercial/industrial land use. The subject property is covered entirely by buildings or paved surfaces except for a narrow strip of landscaping along the streets on the north and west perimeters. Plants on the subject property are limited to grass and shrubs or small trees used in landscaping. Similar conditions exist on neighboring developed properties, while undeveloped properties to the north and south feature grass, weeds and invasive undergrowth such as Himalayan Blackberry. No wildlife species are known to exist at the former Bayliner facility. Therefore, ecological receptors are not considered a factor at the former Bayliner facility.

2.7.6 Potential Exposure Pathways

Migration or "exposure" pathways are routes potentially taken by contaminants as they migrate away from the contaminant source location through environmental media to potential environmental receptors. In order for an exposure pathway to be complete, each of the following elements must be present[4]:

- A mechanism of contaminant release from primary or secondary sources;

[4] ASTM Standard Guide E1689-95 *Developing Conceptual Site Models for Contaminated Sites*

- A transport medium, if potential environmental receptors are not located at the source; and,

- A point of potential contact between environmental receptors and the contaminated medium.

Possible migration pathways for a given site might include groundwater, surface water, air, sediment, and soils. Descriptions of each of the potential migration pathways are presented below.

2.7.6.1 Groundwater – Direct Exposure

Given the depth of groundwater (15 to 22 feet bgs), direct contact is unlikely. No groundwater supply wells exist on the site, and future installation of water supply wells is highly unlikely since adequate potable water is provided to the site by the City of Arlington's municipal water supply system. In addition, the property owner intends to implement an Institutional Control (restrictive covenant) prohibiting future extraction and use of on-site groundwater as long as PCE impacts are present.

Based on review of well logs filed with the state, the nearest existing potable water supply well is the City of Arlington's municipal supply well located approximately 1,500 feet northwest of the Bayliner property. Since PCE-contaminated groundwater does not extend beyond the Bayliner property boundary, there is no impact to the City well. Furthermore, the City well pumps from a depth of 150 to 180 feet bgs, while the PCE-impacted groundwater at the site is limited to depths between approximately 15 and 35 feet bgs.

2.7.6.2 Groundwater - Ingestion

As discussed above, no groundwater supply wells were identified in or near the contaminated area, so there is no current complete pathway for ingestion of PCE-contaminated groundwater.

2.7.6.3 Surface Water

There are no surface water bodies within 2,000 feet of the site except for the on-site retention ponds, and no contaminated media present at the ground surface where contact with stormwater runoff is possible. As such, the surface water exposure pathway is incomplete.

2.7.6.4 Indoor Air – Inhalation of Vapors

There is a potential for vapors volatilized from PCE in the subsurface to accumulate beneath the concrete floor slabs of site buildings. One sub-slab vapor sample obtained beneath Building #11 indicates that such vapor accumulation may be occurring. This, in turn, creates a potential for such vapors to migrate through the slab, or to migrate via cracks and other penetrations in the slab, into the building. Vapor migration into the building envelope is affected by a variety of

factors such as thickness and integrity of the floor slab, ventilation and air temperature within the building, and operation of fans, HVAC systems and other equipment that affect air movement within the building.

PCE was detected in indoor air samples collected in April 2010 in Buildings #4, #8, #10, #11, #14 and #17, respectively. However, all detected concentrations were below the draft indoor air CUL[5]. Consequently, although data suggest that the vapor exposure pathway is complete, there is no evidence that PCE in indoor air may result in unacceptable health risks.

2.7.6.5 Ambient Air – Inhalation of Vapors

A sample of ambient (outdoor) air was collected in April 2010 concurrent with the indoor air samples discussed above. PCE was detected, albeit at a very low concentration. Although the source of PCE in outdoor air is unknown since the entire Bayliner property is covered by buildings or paved surfaces, it is unlikely that the detection results from transport of PCE in the vapor phase from the subsurface. Therefore, the inhalation of vapors in ambient air pathways is considered to be incomplete.

2.7.6.6 Soil – Direct Exposure and Ingestion

Soil sampling conducted at the site identified the presence of low concentrations of PCE (0.0036 to 0.025 milligrams per kilogram) in soil at depths of 15 to 20 feet bgs. As such, there is a potential, although unlikely, for direct contact with PCE-impacted soil. Consequently, this pathway is considered to be potentially complete. However, since all detected concentrations were below the Method A CUL for Residential Soils, there is no evidence that exposure would result in unacceptable human health risks.

2.8 CLEANUP STANDARDS

Washington MTCA regulations address Cleanup Standards for contaminated groundwater in WAC 173-340-200 and 173-340-720. A Cleanup Standard, as defined in WAC 173-340-200 requires the specification of hazardous substance concentrations that protect human health and the environment (“Cleanup Levels”), and the identification of the location on the site where those Cleanup Levels must be attained. This location is defined as the Point of Compliance. A Cleanup Standard consists of the following three distinct elements:

1. A Cleanup Level (CUL), expressed as the concentrations of hazardous substances present in site groundwater that is protective of human health and the environment, as measured at the Point of Compliance;

[5] *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*, *Review Draft,* Washington Department of Ecology, October 2009

2. A Point of Compliance (POC) , i.e. the location(s) on the site where the CUL needs to be met and where groundwater quality is monitored to confirm the effectiveness of the cleanup action; and

3. Any other applicable state and federal laws.

2.8.1 Cleanup Levels

WAC 173-340-720 identifies MTCA groundwater cleanup standards. In general, cleanup standards are established based on whether the groundwater at the site is considered potable or non-potable. Since information has not been developed to determine if the groundwater at the site is non-potable as described in WAC 173-340-720(2), for the purposes of this report groundwater at the site is being considered as potable.

Cleanup levels for potable groundwater may be established under MTCA regulations using one of three methods.

Method A CUL for Potable Groundwater is determined using lookup tables published by Ecology listing allowable concentrations of several common contaminants. These concentrations must be at least as stringent as concentrations specified in any applicable state or federal laws such as Maximum Contaminant Levels (MCLs) established under the federal Safe Drinking Water Act. In addition, Method A cleanup levels must not exceed natural background concentrations or the practical quantitation limit, whichever is higher.

Method B CUL for Potable Groundwater uses a universal method for determining cleanup levels for all media at all sites. For individual carcinogens, the Method B calculation of CUL is based on not exceeding the upper bound of estimated excess cancer risk (ECR) of one in a million (1×10^{-6}). For non-carcinogenic substances, CUL concentrations are calculated to result in no acute or chronic toxic effects on human health (that is, a hazard quotient ≤ 1), and no significant adverse effects on the propagation of aquatic and terrestrial species. Site-specific risk assessments may be used for the establishment of a Method B CUL.

Method C CUL for Potable Groundwater is established to be protective of human health and the environment for certain specified site uses and conditions such as property use limited to industrial activities. Method C CUL may be established and used if 1) Method A and B CUL are below the naturally-occurring background concentrations, 2) Method A and B CUL have the potential for creating significantly higher health risks than a Method C level, or 3) Method A or B CUL are below technically possible concentrations.

At this time it is unknown whether it is technically possible to achieve the Method A Groundwater CUL at the site. However, for the purposes of this report, the Method A CUL of 5 µg/L will be evaluated as the presumptive CUL for the site.

2.8.2 Points of Compliance

To develop a Cleanup Standard for the site, the location where the CUL must be met, which is defined as the Point of Compliance (POC) must be determined. Two options exist for identifying the POC, a Standard POC and a Conditional POC. WAC 173-340-720(6) defines a Standard POC for groundwater as "established throughout the site from the uppermost level of the saturated zone extending vertically to the lowest depth which could potentially be affected by the site."

When it is demonstrated under WAC 173-340-350 through 390 that it is not practicable to achieve the CUL throughout the site within a reasonable restoration time frame, a Conditional POC may be used. Factors such as potential risks posed by contamination at the site, current and potential future uses of the site, likely effectiveness of institutional controls, toxicity of hazardous substances at the site, and the likely natural attenuation of hazardous substances at the site are all considered in assessing whether a cleanup action provides for a reasonable restoration time frame.

As further set forth in Section 3.1 of this Feasibility Study, Brunswick has demonstrated that it may not be practicable at the former Bayliner Marine site to achieve the groundwater CUL of 5 µg/L throughout the site within a reasonable restoration time frame, as it is likely not technically feasible, in any time frame, to reduce the concentrations of PCE to 5 µg/L in the source area. Accordingly, a Conditional POC should be established using monitoring wells MW-5 and MW-7, which are located on the site near the western and northern (downgradient) property boundaries.

MW-5 and MW-7 are appropriate locations to serve as a Conditional POC, which, according to WAC 173-340-720(8(c) should be as close to the source of the PCE as practicable. Both MW-5 and MW-7 are located on the site. MW-7 is located down gradient as close as practicable to the PCE plume, while still being outside the plume boundaries. MW-7 would be an effective location to monitor for future migration of the plume beyond its current extent. MW-5 is located approximately 360 feet west of MW-4. This location is an effective location to monitor the areal coverage west and down gradient of the area of observed PCE impact. Furthermore, both MW-5 and MW-7 are located down gradient closer to the boundary of the Bayliner property and would, therefore, be effective locations for monitoring to confirm that PCE is not migrating off-site and will not result in impacts to adjoining properties or down gradient receptors.

2.8.3 Applicable State and Federal Laws

As stated above, the federal Safe Drinking Water Act established a MCL for PCE in drinking water of 5 µg/L. This will be the presumptive CUL for PCE-contaminated groundwater at the former Bayliner Mariner facility.

3.0 FEASIBILITY STUDY

3.1 OVERVIEW OF CLEANUP ACTION ALTERNATIVES

Based on available site characterization data and previous experience with remediation of PCE-impacted groundwater, a number of potential site cleanup action alternatives were identified for evaluation. Several of the alternatives consist of combining more than one cleanup action component.

The contaminated groundwater at the site contains low concentrations of PCE which pose a low risk of on-site direct exposure in a fully developed industrial setting, and present no threat of exposure to off-site receptors. Although sufficient site data has been collected to fully delineate the nature, degree and extent of contamination, relatively little data is currently available about the geochemical characteristics of site soil and groundwater. There is evidence that PCE concentrations in groundwater have been declining, possibly as a result of natural degradation processes. Continuation of this natural degradation process has been evaluated as one long-term remedy that may be appropriate for the site.

Several active groundwater remedies have also been evaluated for applicability to this site, such as is situ chemical oxidation, air sparging, soil vapor extraction, and groundwater extraction. Preliminary evidence indicates that these remedial approaches may be viable alternatives. However, accurate projections of the effectiveness and time frames for these cleanup actions are difficult, based on the low residual concentrations observed at the site and the limited empirical data currently available.

The alternatives presented are commonly used technologies to achieve significant reductions in groundwater contaminant concentrations. However, technologies like these are typically implemented at sites where chlorinated solvent concentrations are one or more orders of magnitude higher than the highest concentrations measured at the former Bayliner Marine site. The effectiveness of these remedial measures typically significantly declines as concentrations are reduced (i.e., concentration reduction goes asymptotic), and remedial measures are often unable to achieve cleanup down to the low concentrations used as drinking water criteria.

Cleanup actions often utilize active remedies to implement a sharp initial reduction of groundwater concentrations, then transition to other approaches as the effectiveness of the active remedy diminishes. This transition often occurs at concentrations above the levels currently observed at the former Bayliner Marine site. It is uncertain whether these, or any, active remedies can be effective in significantly reducing already low concentrations and bringing the entire site into compliance with the presumptive site-wide CUL of 5 µg/L PCE.

Therefore, this study has also evaluated the use of a Conditional POC at two existing monitoring wells (MW-5 and MW-7) located near the downgradient property boundary of the site after active treatment is complete.

The primary potential route of exposure to site contamination would be through ingestion of contaminated groundwater. The on-site contaminated groundwater is not utilized as a source for irrigation, process or drinking water. Furthermore, it is unlikely to be utilized for drinking water in the future because the property is currently served by municipal water supplies and Brunswick anticipates it will continue to be into the future. To maintain the current protectiveness into the future, the Feasibility Study has also evaluated the implementation of institutional controls through a restrictive covenant on the property that would limit future use to industrial activities consistent with current and recent historic site uses, and prohibit the extraction and use of groundwater at the site. These Institutional Controls will supplement and enhance the protections afforded through the other cleanup action components.

Section 3.2 presents an overview of the criteria used to evaluate various cleanup action alternatives. Section 3.3 provides a general description of each of the cleanup action components under consideration, listing advantages and disadvantages typically associated with each technology. In Section 3.4, a number of cleanup action alternatives are identified. These alternatives utilize various combinations of the individual components described in Section 3.3. A site-specific evaluation of each of the proposed alternatives is presented and compared against the listed evaluation criteria.

3.2 EVALUATION CRITERIA

Criteria for evaluation of cleanup action alternatives are listed in WAC 173-340-360. These criteria include four threshold criteria (WAC 173-340-360(2)(a):

- Protective of human health and the environment;
- Complies with cleanup standards;
- Complies with applicable state and federal laws; and
- Provides for compliance monitoring.

Any cleanup action alternative that fails to meet one or more of these threshold criteria was excluded from further detailed evaluation. Each of the alternatives that achieved these threshold requirements were then evaluated further on the following criteria (WAC 173-340-360(2)(b), which look at whether each alternative:

- Is permanent to the maximum extent practicable;
- Provides for a reasonable restoration time frame; and

- Considers public concerns

The procedure for determining whether a cleanup action uses permanent solutions to the maximum extent practicable is provided in WAC 173-340-360(3). This section requires use of a disproportionate cost analysis to compare the relative costs and benefits of a permanent cleanup alternative with other alternatives being considered. Costs are disproportionate to benefits if the incremental cost of the permanent alternative exceeds the incremental benefit achieved by that permanent alternative. Alternatives are ranked from most permanent to least permanent and evaluated using the criteria in WAC 173-340-360(3)(f), which include:,

- Protectiveness;
- Permanence;
- Cost;
- Effectiveness over the Long-Term;
- Management of Short-Term Risks;
- Technical and Administrative Implementability; and
- Consideration of Public Concerns

To determine whether a cleanup alternative provides for a reasonable restoration time-frame, WAC 173-340-360(4)(b) identifies the following factors to be considered:

- Potential risks posed by the site to human health and the environment;
- Practicability of achieving a shorter restoration time frame;
- Current use of the site and surrounding areas and resources;
- Potential future uses of the site, surrounding areas and resources;
- Availability of alternative water supplies;
- Likely effectiveness and reliability of institutional controls;
- Ability to control and monitor migration;
- Toxicity of hazardous substances at the site; and
- Natural processes that have been documented to reduce concentrations of hazardous substances at the site

Brunswick's disproportionate cost analysis is set forth in Table 3 in Appendix B and the outcome of the analysis is discussed in Sections 3.5 and 4.0.

3.3 SUMMARY OF CLEANUP ACTION COMPONENTS

3.3.1 In Situ Chemical Oxidation (ISCO)

In situ chemical oxidation (ISCO) is based on delivery of chemical oxidants directly to media affected by site contaminants (e.g., soil and/or groundwater) in order to chemically convert contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, or inert. Although oxidizing agents can include ozone, hydrogen peroxide, permanganate and Fenton's Reagent (hydrogen peroxide mixed with an iron catalyst), this analysis will be restricted to the active oxidant permanganate which is available commercially as either potassium or sodium permanganate. The persistence of the oxidant in the subsurface is important since it affects the contact time for advective and diffusive transport and, ultimately, the delivery of the oxidant to the targeted zones in the subsurface.

For example, the oxidation of PCE using permanganate (MnO_4), although dependent on pH, may yield a variety of intermediates such as dichloro, oxalic, formic, and glycolic acids (carboxylic acids [CA], all of which have lower toxicity) as the reaction proceeds to direct mineralization to CO_2 and chloride ions. The basic stoichiometry for the oxidation of PCE by permanganate is as follows:

$$C_2Cl_4 + MnO_4\text{-} \rightarrow CA + 4Cl\text{-} + 2MnO_2 \text{ (solid)}$$

Advantages:

- Proven technology.
- Technology is appropriate for a variety of contaminants (e.g., VOCs and SVOCs).
- Contaminants reduced/destroyed in situ.
- Short treatment times under optimal conditions.
- No permanent or semi-permanent facilities required.
- Slow reaction rate of MnO_4- allows for greater transport distances and thus extended treatment zones during injection.

Disadvantages:

- Concentration reductions >90 percent are likely to be difficult to achieve, so it is unlikely to be technically possible to achieve CUL throughout the site within a reasonable restoration time frame.

- A wide variety of naturally occurring reactants such as natural organic matter (NOM) react with MnO_4- thus imposing a background oxidant demand. The effect increases the mass (and cost) of MnO_4- necessary to achieve treatment objectives.

- Some grades of $KMnO_4$ contain heavy metal impurities, which injected, could result in unacceptable groundwater concentrations (e.g., hexavalent state of chromium [Cr^{+6}]). Further, in some cases naturally occurring trivalent chromium can be oxidized to hexavalent chromium.

- Additional health and safety concerns associated with handling of strong oxidants.

3.3.2 Air Sparging and Soil Vapor Extraction (AS/SVE)

Air sparging (AS) is an in situ remedial technology that reduces concentrations of VOCs that are adsorbed to soils and/or dissolved in groundwater. AS involves the injection of contaminant-free air into the saturated zone enabling partitioning of contaminants from the dissolved phase to the vapor phase. Injected air moves vertically and horizontally through the saturated zone, creating an underground air stripping process. Injected air migrates to the unsaturated zone where an SVE system creates a negative pressure to capture stripped VOCs.

An air sparging system is composed of four basic elements: air sparging wells, an air compressor or blower; a soil vapor extraction system; and, a monitoring system. These components are further described as follows:

Air Sparging Wells - An air sparging well is usually constructed of 2-inch diameter, Schedule 40 or higher, polyvinyl chloride (PVC) pipe. The bottom of the well consists of approximately two feet of a pervious section (well screen or porous pipe diffuser) connected to a pipe extending from the well screen to the surface. The sparge well is completed by placing a sand pack around the well screen. A 1- to 2-foot thick bentonite or cement seal is placed around the sand pack. The well bore is then grouted to the top of the water table.

Air Blower - Air would be injected into sparging wells under pressure with a mechanical blower. A pipe manifold constructed of small diameter PVC pipe is usually used to convey air from the blower to each well. Air injection pressure is governed by the static water head above the sparge point, the entry pressure of the saturated soils, and the injection flow rate. Working pressures are generally on the order of 15 psi and air flow under field conditions varies between 3 and 10 scfm. In some cases, aquifer characteristics require that air flow be pulsed in order to improve transfer rates.

Soil Vapor Extraction System - Vapors mobilized by the AS system are controlled by application of an SVE system. The vapor extraction wells may be located in the same boring as the sparging well and are similarly constructed of small diameter PVC piping which extends to just above the water table.

Monitoring - A number of parameters may be used to monitor the performance of an air sparging system. The most common are dissolved oxygen (DO), water table elevation, soil gas vacuum from the SVE system, and VOC concentration.

The effectiveness of an AS/SVE system is dependent upon:

- Permeability of soil
- Soil structure and stratification
- Soil moisture
- Depth to groundwater

A pilot test would be necessary to evaluate SVE effectiveness and identify design parameters, and typically includes short term extraction of vapors from a single well (or existing monitoring well) at different extraction rates and wellhead vacuums.

Advantages:

- Proven technology; readily available equipment; easy installation.
- Can be implemented without significant disruption to ongoing site operations.
- Short treatment times (6 months to 2 years).
- Requires no removal, treatment, storage, or discharge considerations for groundwater.

Disadvantages:

- Concentration reductions >90 percent are likely to be difficult to achieve, so it is unlikely to be technically possible to achieve CUL throughout the site within a reasonable restoration time frame.
- Potential for inducing migration of contaminants.
- Effectiveness may be reduced when applied to sites with low-permeable or stratified soil.
- May require treatment for discharge of extracted vapor to atmosphere; potentially resulting in minor degradation of air quality.

3.3.3 Groundwater Extraction and Treatment (GWET)

In general, a GWET system is designed to remove groundwater through a series of extraction wells, pass extracted groundwater through a treatment device (e.g., granulated activated

carbon), then re-inject or discharge the treated groundwater to surface water, storm sewer or publicly owned treatment works (POTW). The technology has three components: groundwater extraction, groundwater treatment, and treated groundwater discharge. These components are discussed individually in the following sections:

Groundwater Extraction - Most commonly, vertical wells screened in the contaminated zone are used for extraction and equipped with electric submersible pumps.

Groundwater Treatment - Removal of VOCs from groundwater is generally accomplished by partitioning them to air (air stripping), solids (granular activated carbon), or by destruction (UV oxidation).

Groundwater Discharge - Treated water effluent may potentially be discharged through piping directly to surface water, indirectly to a storm water system, to a POTW or re-injected to the subsurface through upgradient wells, galleries or basins.

Advantages:

- Established technology.
- Technology can be used for a variety of contaminants (VOCs, SVOCs and metals).
- May be used as a hydraulic barrier to prevent off-site migration of contaminant plumes

Disadvantages:

- Concentration reductions >90 percent are likely to be difficult to achieve, so it is unlikely to be technically possible to achieve CUL throughout the site within a reasonable restoration time frame.
- Attainment of cleanup levels may take a very long time. Sorbing compounds such as PCE are retarded relative to groundwater velocity which increases the time required for cleanup.
- Pumping depresses the groundwater level leaving residuals sorbed to soil. When groundwater level returns to normal level, contaminants sorbed to soil may become dissolved (resulting in a rebound of contaminant concentrations in groundwater).
- GWET technology may not be feasible for sites with low-permeable zones (less than about 10^{-5} cm/sec) which restrict contaminant flow to extraction wells.
- Capital costs for installation and annual costs for O&M are high.

3.3.4 Monitored Natural Attenuation (MNA)

The term "natural attenuation" refers to the reduction in mass or concentration of a compound in groundwater over time due to naturally-occurring physical, chemical, and/or biological processes. Physical processes include dispersion, dilution, sorption and volatilization of dissolved compounds to the vapor phase (e.g., atmosphere or soil gas). Typical chemical mechanisms include ion-exchange reactions (e.g., oxidation, reduction), hydrolysis and abiotic transformations. Biological degradation and/or transformation occur primarily by aerobic and anaerobic microbial processes, although plant uptake also occurs in some situations.

Monitored natural attenuation also involves sampling and analysis to verify that attenuation of the constituents is occurring. In some cases, natural attenuation processes can be modeled to predict long-term performance. However, regular groundwater monitoring is a more effective and reliable means of assessing natural attenuation.

WAC 173-340-370(7) states that natural attenuation is an appropriate remedy at sites where:

a) Source control has been conducted to the maximum extent practicable;
b) The presence of residual contamination during the restoration time frame does not pose an unacceptable threat to human health or the environment;
c) There is evidence that natural biodegradation or chemical degradation is occurring and will continue to occur; and,
d) Appropriate monitoring is performed

It is anticipated that conditions a, b and d will be applicable at the site. Insufficient data is currently available to evaluate the applicability of condition c from the above list of criteria. Additional site geochemical data would be collected during the initial stages of the site remediation effort to assist with determining whether natural biodegradation or chemical biodegradation is occurring and will continue to occur.

The USEPA OSWER directive regarding the use of MNA (OSWER Directive 9200.4-17P, April 21, 1999) directly addresses the suitability of MNA as a remedial alternative for chlorinated solvents. In the OSWER directive, the USEPA states that the most important considerations regarding the suitability of MNA as a remedy include: 1) whether the contaminants are likely to be effectively addressed by natural attenuation processes, 2) the stability of the groundwater contaminant plume and its potential for migration, and 3) the potential for unacceptable risks to human health or environmental resources by the contamination. Sites where the contaminant plumes are no longer increasing in extent, or are shrinking, would be the most appropriate candidates for MNA.

A conceptual MNA approach for the site would include collecting groundwater samples from existing monitoring wells MW-1 through MW-7 on a quarterly basis for VOC analysis. Periodically, the VOC analysis would be supplemented by analyses for geochemical parameters such as dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and others.

The groundwater monitoring data would be evaluated to confirm delineation of the plume, track concentration trends, and evaluate the progress of MNA in achieving the remedial objectives

Advantages:

- Generally lower cost than other active remedies.
- Does not result in byproducts or waste stream that cause secondary impacts to air or surface water
- Minimizes disruption to ongoing site activities

Disadvantages:

- May take somewhat longer to achieve CUL

- Concentration reductions >90 percent are likely to be difficult to achieve, so it is unlikely to be technically possible to achieve CUL throughout the site within a reasonable restoration time frame.

3.3.5 Institutional Controls (IC)

Placement of an IC (e.g., deed restriction) on the property would be used as a component of several cleanup action alternatives to preclude consumption or other use of groundwater at the site. In this manner, protectiveness of human health and the environment would be enhanced through exposure prevention. WAC 173-340-440(4) identifies certain circumstances when Institutional Controls "shall be required to assure both the continued protection of human health and the environment, and the integrity of an interim action or cleanup action…" The cited circumstances include several that may be applicable to the former Bayliner Marine site:

- Sites where Method A or Method B CULs apply and where hazardous substances remain at the site at concentrations that exceed the applicable CUL.
- Sites where a groundwater CUL is established that exceeds the drinking water CUL based on a site-specific risk assessment
- Sites where a Conditional POC is established

ICs are administrative and/or legal controls that prevent exposure to constituents by limiting land use. Institutional controls, such as land use covenants, can be employed as part of remedial actions to prevent exposure to impacted media and thus ensure protectiveness of the remedy. Several of the Alternatives discussed herein assume the use of an IC as an additional exposure prevention measure. A restrictive covenant as applied to this site would include the following elements:

- A restriction on installing drinking water wells in the shallow aquifer on-site while PCE concentrations in groundwater exceed the Federal MCL of 5 µg/L.

- A restriction on construction or relocation of buildings on site that would prevent proper monitoring of groundwater concentrations.

- A requirement to limit property zoning and use to industrial activities consistent with the current zoning and uses.

While restrictive covenants have been used for many years, they have sometimes been rendered unenforceable under common law (e.g., waiver, abandonment, acquiescence, adverse possession, foreclosure of a tax lien, the rule against perpetuities, and requirements for privity or appurtenance, etc.). However, in 2007, Washington enacted the Uniform Environmental Covenants Act (UECA), which establishes environmental covenants for sites in Washington that are remediated under oversight of Ecology or USEPA. Environmental covenants created under the UECA contain activity or land use restrictions on real property that legally stay with the land, regardless of changes of property ownership. The covenants are based on traditional property law principles and are recorded in local land records, thereby binding successive owners of the property. The purpose of the UECA is to ensure that environmental covenants created for a particular site are not invalidated by conflicts or misunderstandings with other local, state, or federal regulations. The UECA provides clear rights for Ecology to create, record, monitor, enforce, modify and terminate environmental covenants, and thereby ensure with greater certainty the protection of human health and the environment throughout the life of the environmental covenant, including during real estate transactions or legal actions. Ecology has updated the language in its Model Restrictive (Environmental) Covenant to be consistent with the UECA.

Advantages:

- Protects all parties to the site cleanup by helping to ensure long-term integrity of the cleanup actions and prevents actions by future site owners that may result in inadvertent exposure risks or cause migration of site contamination to previously non-impacted areas
- Relatively low cost for extra measure of protection

Disadvantages:

- May not be utilized under MTCA rules as the primary remedy

3.3.6 No Action

Inclusion of the no action alternative serves as a baseline for the alternatives evaluation. The No Action alternative would not require remedial activities beyond the investigation conducted to date. It is anticipated that PCE concentrations would continue to decline through natural biodegradation and chemical degradation processes. Groundwater monitoring to date indicates that contamination is not migrating beyond the property boundaries. Therefore, the No Action alternative is expected to be equally effective in achieve the CUL at the Conditional POC and

equally protective of human health and the environment However, the restoration time frame is uncertain and no long-term monitoring would be conducted. No institutional controls would be included to prevent future exposure to residual on-site PCE.

3.4 DETAILED EVALUATION OF CLEANUP ACTION ALTERNATIVES

This Feasibility Study evaluates six cleanup action alternatives to address groundwater impact at the site. The following sections provide an evaluation of each of these alternatives. A summary of the evaluation is presented in Table 3 in Appendix B.

3.4.1 Alternative #1 – Site-Wide In Situ Chemical Oxidation

Alternative #1 would apply ISCO technology to achieve a rapid initial reduction of PCE concentrations. ISCO can in certain cases be effective in achieving concentration reductions of up to 90 percent. However, given the relatively low residual PCE concentrations observed at the site, this level of cleanup efficiency may not be feasible at this site.

3.4.1.1 Threshold Criteria

3.4.1.1.1 Protection of Human Health and Environment

Implementing ISCO throughout the impacted area is a protective alternative because it would rapidly reduce PCE concentrations throughout the plume. Monitoring would be performed to confirm residual concentration reduction.

3.4.1.1.2 Compliance with Cleanup Standards

Compliance with cleanup standards is defined by meeting the requirements of WAC 173-340-700 through WAC 173-340-760. Alternative #1 is anticipated to comply with cleanup standards by attaining cleanup levels at the points of compliance in accordance with WAC 173-340-700(7).

The ability of the ISCO technology to reduce PCE concentrations below the CUL throughout the site within a reasonable time frame is uncertain. Therefore, the effectiveness of this cleanup action would be determined by measurements of PCE concentrations at the Conditional POC at MW-5 and MW-7 (refer to Section 2.8.1). By using these locations for monitoring to confirm that PCE-impacted groundwater does not migrate beyond the property boundary, this alternative will comply with the cleanup standard and ensure protectiveness.

3.4.1.1.3 Compliance with Applicable State and Federal Laws

This cleanup action alternative is designed to achieve the CUL of 5 µg/L at the Conditional POC, which is compliant with the MCL established under the federal Safe Drinking Water Act.

3.4.1.1.4 Opportunity for Compliance Monitoring

Compliance monitoring would be performed to confirm residual concentration reduction.

3.4.1.2 Other Evaluation Criteria

3.4.1.2.1 Permanence

Alternative #1 is expected to provide a permanent reduction in toxicity, mobility and volume of PCE present in groundwater at the site. Chemical oxidation of PCE is not reversible and proceeds to direct mineralization to CO_2 and chloride ions.

3.4.1.2.2 Restoration Time Frame

The estimated restoration time frame for Alternative #1 is 2 years. Approximately 1 year would be required for pilot testing, design and construction, followed by application of ISCO over a period of up to one year. Monitoring of groundwater would be performed for up to 2 years during the design and application phases. As long as PCE concentrations at the Conditional POC remained below the CUL, throughout this process, monitoring would be discontinued and the cleanup action deemed complete at the end of this time period.

3.4.1.2.3 Long-Term Effectiveness

Alternative #1 permanently reduces PCE concentrations and monitors to confirm long-term stability of the plume and residual concentration reduction.

3.4.1.2.4 Management of Short-Term Risks

The impacted area is limited within the boundaries of the Bayliner property and there are no current groundwater receptors. Therefore, short-term risks associated with the presence of residual PCE in groundwater are minimal. Short-term risks associated with implementing ISCO would be addressed with a site-specific health and safety plan. Implementing ISCO as contemplated in Alternative #1 does not create excess short-term risks that could impact receptors at the site or adjacent property.

3.4.1.2.5 Technical and Administrative Implementability

Based on limited existing information, site conditions appear to be generally favorable for implementation of an ISCO remedy. For example:

- The saturated zone is predominantly composed of sand and gravel. Therefore, the permeability should be sufficient to allow for effective delivery of the oxidant to the subsurface. Pilot testing would be required to evaluate effective radius of influence.

- The aquifer is unconfined and field measurements have documented elevated dissolved oxygen concentrations and oxidation reduction potential (ORP). These conditions suggest aerobic oxidizing conditions which favor ISCO over other remedial technologies that rely on reducing conditions (e.g., reductive dechlorination). However, pilot testing would be required to evaluate the natural oxidant demand.

- The targeted area of remediation is accessible and existing infrastructure does not preclude application of the technology.

Overall, the physical and chemical conditions in the subsurface suggest that ISCO may be a technically feasible alternative for the site.

There are no known administrative barriers to implementing the technology.

3.4.1.2.6 Cost

The following conceptual design has been developed for Alternative #1 as the basis for estimating the cost to remediate the impacted area described above:

- Installation of 154 injection points (assuming a treatment area of 160,000 square feet, treatment depth of 10 feet and radius of influence of 20 feet). Pilot testing will be required to determine the actual effective radius of treatment.

- Injection of approximately 160 tons of oxidant to overcome natural oxidant demand and degrade residual PCE (assuming a natural oxidant demand of 2 g/kg). Oxidant injection would occur twice. Pilot testing will be required to confirm natural oxidant demand.

- Installation and sampling of 16 monitoring points (assuming one confirmatory monitoring point per 10 injection points).

The estimated cost for Alternative #1 is $1,715,000. Details of the calculation of this estimated cost are provided in Table 4 in Appendix B.

3.4.1.2.7 Consideration of Public Concerns

Community acceptance of the remedial alternative will be evaluated during any public comment period required pursuant to WAC 173-340-600 or WAC 197-11-970 (Determination of Non-Significance) that may involve individuals, community groups, local governments, tribes, federal and state agencies, or other organizations that may have an interest in or knowledge of the site. There are no known public concerns with this alternative.

3.4.2 Alternative #2 – Monitored Natural Attenuation and Institutional Control

Alternative #2 relies upon active monitoring of the natural attenuation of dissolved PCE in groundwater to achieve further reduction of PCE concentrations. Monitoring will be conducted

to confirm the stability of the impacted area and the reduction of residual contaminant concentrations. Institutional controls would be placed in the property deed records to preclude exposure to residual PCE during the monitoring period.

3.4.2.1 Threshold Criteria

3.4.2.1.1 Protection of Human Health and Environment

Alternative #2 is protective of human health and the environment because it prevents exposure of receptors to impacted groundwater using an institutional control and actively monitors to confirm that concentrations are declining and not migrating beyond the area controlled by the IC. Existing groundwater monitoring data indicates that the area of impacted groundwater is confined to the site, is well defined with existing monitoring wells, and (based on initial data), appears to be declining in concentration. A groundwater monitoring program will be implemented to track concentration changes and confirm delineation. Protection of human health and the environment during the MNA period will be enhanced by placing a deed restriction on the property to preclude future activities that could result in exposure to residual PCE in groundwater (e.g., installation of supply wells).

3.4.2.1.2 Compliance with Cleanup Standards

Compliance with cleanup standards is defined by meeting the requirements of WAC 173-340-700 through WAC 173-340-760. Alternative #2 is anticipated to comply with cleanup standards by attaining cleanup levels at the points of compliance in accordance with WAC 173-340-700(7).

WAC 173-340-720(8) states that the standard point of compliance for all sites is established throughout the site except where it is not practicable to meet the CUL throughout the site within a reasonable restoration time frame. The natural attenuation process occurs gradually over time, and is not expected to reduce PCE concentrations below the CUL throughout the site for a number of years. Therefore, the effectiveness of this cleanup action will be monitored at the Conditional POCs MW-5 and MW-7 located near the western and northern (downgradient) property boundaries (refer to Section 2.8.1). By using these locations for monitoring to confirm that PCE-impacted groundwater does not migrate beyond the property boundary, this alternative will comply with the cleanup standard and ensure protectiveness.

3.4.2.1.3 Compliance with Applicable State and Federal Laws

This cleanup action alternative is designed to achieve the CUL of 5 µg/L at the Conditional POC, which would be compliant with the MCL established under the federal Safe Drinking Water Act.

3.4.2.1.4 Opportunity for Compliance Monitoring

Compliance monitoring through existing monitoring wells is an integral part of the remedy and therefore satisfies this criteria.

3.4.2.2 Other Evaluation Criteria

3.4.2.2.1 Permanence

Groundwater monitoring conducted as part of Alternative #2 is expected to track the natural and permanent reduction in toxicity, mobility and volume of PCE present in groundwater at the site. MNA does not actively destroy or remove contaminants, but the approach is regarded by USEPA as a proactive remedy.

3.4.2.2.2 Restoration Time Frame

The estimated restoration time frame for Alternative #2 is 5 years or longer. Existing groundwater data and the age of the plume suggest that the plume may already be stable. However, there is currently insufficient data to make a definitive determination of stability or to accurately estimate the time required to achieve Method A levels. As a conservative measure, the duration of the monitoring period has assumed to be 10 years. Institutional controls would be implemented during this monitoring period to prevent use of site groundwater or changes in site use that might create a potential for exposure to the residual PCE in site groundwater.

3.4.2.2.3 Long-Term Effectiveness

Natural attenuation would reduce the mass of PCE in groundwater, although there is uncertainty that it would reduce concentrations to below the CUL. Existing groundwater monitoring data suggests that concentrations of PCE at the site may exhibit a declining trend. However, due to the recent discovery of impacted groundwater at the site, there has not been sufficient time to make a definitive determination about concentration trends. Concentrations of PCE (maximum of 59 µg/L in well MW-1 in December 2009) are low to moderate and potentially declining, the extent of impact is limited to within the boundary of the property, and potential exposure routes can be further limited with institutional controls. Therefore, Alternative #2, combining MNA with institutional controls, is a viable and effective approach.

3.4.2.2.4 Management of Short-Term Risks

The impacted area is limited within the boundaries of the Bayliner property and there are no current groundwater receptors. Therefore, short-term risks associated with the presence of residual PCE in groundwater are minimal. Short-term risks would be additionally mitigated through implementation of the IC as an exposure prevention measure.

3.4.2.2.5 Technical and Administrative Implementability

MNA is readily implementable from a technical perspective. Quarterly groundwater monitoring has been conducted at the site since discovery of impacted groundwater. To date, four quarters of monitoring have been conducted. Although the existing data is insufficient to make a definitive determination of the effectiveness of natural attenuation, available monitoring data suggests potentially declining concentrations. For example, there are two monitoring wells on site that have at one time exhibited PCE concentrations above the Method A criteria (MW-1 and MW-4), and concentrations in both wells have declined since initial sampling. Since concentrations of PCE (maximum of 59 µg/L in well MW-1 in December 2009) are low to moderate and potential exposure routes are limited, MNA is a viable cleanup approach for the site.

There are no known administrative barriers to implementing the technology. The current owner of the property has indicated a willingness to consider establishing a restrictive covenant to protect human health and the environment.

3.4.2.2.6 Cost

The following conceptual plan has been developed for Alternative #2 as the basis for estimating the cost to remediate the impacted area described above:

- One-time up-front cost to obtain a restrictive covenant (IC) for the site.
- Development of a contingency source area remedy.
- Quarterly groundwater monitoring of existing monitoring wells and analysis for VOCs for at least 2 years, and continuing for a period of up to 10 years total, although potentially with decreased frequency and fewer monitoring locations after the second year..
- Supplemental sampling for geochemical parameters on a semi-annual basis.
- Regular reporting of groundwater monitoring results.

The estimated cost for Alternative #2 is $465,000. Details of the calculation of this estimated cost are provided in Table 4 in Appendix B.

3.4.2.2.7 Consideration of Public Concerns

Community acceptance of the remedial alternative will be evaluated during any public comment period required pursuant to WAC 173-340-600 or WAC 197-11-970 (Determination of Non-Significance) that may involve individuals, community groups, local governments, tribes, federal and state agencies, or other organizations that may have an interest in or knowledge of the site. There are no known public concerns with this alternative.

3.4.3 Alternative #3 – Source-Area In Situ Chemical Oxidation and Institutional Control

Alternative #3 would apply the same technology and approach as Alternative #1, except that ISCO technology would be focused in the source area near Building #11. ISCO can in certain cases be effective in achieving concentration reductions of up to 90 percent. However, given the relatively low residual PCE concentrations observed, this level of cleanup efficiency may not be feasible at this site.

Monitoring would be performed to confirm reduction of residual PCE concentrations. Institutional controls would be placed in the property deed records to provide additional long-term protection against exposure risks.

3.4.3.1 Threshold Criteria

3.4.3.1.1 Protection of Human Health and Environment

Alternative #3 is assessed to be protective of human health and the environment. Implementing ISCO in the area of highest observed PCE concentration would rapidly reduce PCE concentrations in the presumed source area. Monitoring would be performed to confirm long-term stability of the plume and reductions of residual PCE concentrations. Protection of human health and the environment during the remediation period will be enhanced by placing a deed restriction on the property to preclude future activities that could result in exposure to residual PCE in groundwater (e.g., installation of water supply wells).

3.4.3.1.2 Compliance with Cleanup Standards

Alternative #3 is anticipated to comply with cleanup standards by attaining cleanup levels at the points of compliance in accordance with WAC 173-340-700(7).

It may not be technically possible for the ISCO technology to reduce PCE concentrations below the CUL throughout the site within a reasonable time frame. Therefore, the effectiveness of this cleanup action would be determined by monitoring of PCE concentrations at the Conditional POC MW-5 and MW-7 (refer to Section 2.8.1). By using these locations for monitoring to confirm that PCE-impacted groundwater does not migrate beyond the property boundary this alternative will comply with the cleanup standard and ensure protectiveness.

3.4.3.1.3 Compliance with Applicable State and Federal Laws

This cleanup action alternative is designed to achieve the CUL of 5 µg/L at the Conditional POC, which is compliant with the MCL established under the federal Safe Drinking Water Act.

3.4.3.1.4 Opportunity for Compliance Monitoring

Compliance monitoring would be performed to confirm long-term stability of the plume and residual concentration reduction.

3.4.3.2 Other Evaluation Criteria

3.4.3.2.1 Permanence

Alternative #3 is expected to provide a permanent reduction in toxicity, mobility and volume of PCE present in groundwater at the site. Chemical oxidation of PCE is not reversible and proceeds to direct mineralization to CO_2 and chloride ions.

3.4.3.2.2 Restoration Time Frame

The estimated restoration time frame for Alternative #3 is 2 years. Approximately 1 year would be required for pilot testing, design and construction, followed by application of ISCO in the source area during the second year. Monitoring of groundwater would be performed during the design and application phases. As long as PCE concentrations at the Conditional POC remained below the CUL throughout this process, monitoring would be discontinued and the cleanup action deemed complete at the end of the ISCO applications.

3.4.3.2.3 Long-Term Effectiveness

Alternative #3 permanently reduces PCE concentrations in the source area. Monitoring would be performed to confirm residual concentration reduction.

3.4.3.2.4 Management of Short-Term Risks

The impacted area is limited within the boundaries of the Bayliner property and there are no current groundwater receptors. Therefore, short-term risks associated with the presence of residual PCE in groundwater are minimal. Short-term risks associated with the implementation of ISCO would be addressed with a site-specific health and safety plan. Implementing ISCO as contemplated in Alternative #3 does not create excess short-term risks that could impact receptors at the site or adjacent property. Short-term risks would be further reduced through implementation of IC to prevent exposure to on-site groundwater containing residual PCE.

3.4.3.2.5 Technical and Administrative Implementability

As discussed in Sections 3.3.1 and 3.4.1.2.5, site conditions appear to be generally favorable for implementation of an ISCO remedy.

There are no known administrative barriers to implementing the technology.

3.4.3.2.6 Cost

The following conceptual design has been developed for Alternative #3 as the basis for estimating the cost to remediate the impacted area described above:

- Installation of 13 injection points (assuming a treatment area of 15,500 square feet, treatment depth of 10 feet and radius of influence of 20 feet). Pilot testing will be required to determine the actual effective radius of treatment.
- Injection of approximately 15.5 tons of oxidant to overcome natural oxidant demand and degrade residual PCE (assuming a natural oxidant demand of 2 g/kg). Pilot testing will be required to confirm natural oxidant demand.
- Installation and sampling of two monitoring points (assuming one confirmatory monitoring point per 10 injection points).
- One-time up-front cost to obtain a restrictive covenant (IC) for the site.
- Quarterly groundwater monitoring of existing monitoring wells and analysis for VOCs for two years.
- Quarterly reporting of groundwater monitoring results.

The estimated cost for Alternative #3 is $290,000. Details of the calculation of this estimated cost are provided in Table 4 in Appendix B.

3.4.3.2.7 Consideration of Public Concerns

Community acceptance of the remedial alternative will be evaluated during any public comment period required pursuant to WAC 173-340-600 or WAC 197-11-970 (Determination of Non-Significance) that may involve individuals, community groups, local governments, tribes, federal and state agencies, or other organizations that may have an interest in or knowledge of the site. There are no known public concerns with this alternative.

3.4.4 Alternative #4 – Source Area Air Sparging/Soil Vapor Extraction and Institutional Control

Alternative #4 would utilize AS/SVE technology focused in the source area near Building #11. AS/SVE can be effective in achieving reductions of VOC concentrations. However, given the relatively low residual PCE concentrations observed at the property it may not be technically possible to achieve the CUL solely through application of this technology.

Monitoring would be performed to confirm the effectiveness of the alternative. Institutional controls would be placed in the property deed records to provide additional long-term protection against exposure risks.

3.4.4.1 Threshold Criteria

3.4.4.1.1 Protection of Human Health and Environment

Alternative #4 is assessed to be protective of human health and the environment. Implementing AS/SVE in the area of highest observed PCE concentration would rapidly reduce PCE concentrations in the presumed source area. Monitoring would be performed to confirm reductions of residual PCE concentrations. Protection of human health and the environment during and after the remediation period will be enhanced by placing a deed restriction on the property to preclude future activities that could result in exposure to residual PCE in groundwater (e.g., installation of water supply wells).

3.4.4.1.2 Compliance with Cleanup Standards

Alternative #4 is anticipated to comply with cleanup standards by attaining cleanup levels at the points of compliance in accordance with WAC 173-340-700(7).

It may not be technically possible for the AS/SVE technology to reduce PCE concentrations below the CUL throughout the site within a reasonable restoration time frame. Therefore, the effectiveness of this cleanup action would be determined by monitoring PCE concentrations at the Conditional POC MW-5 and MW-7 (refer to Section 2.8.1). By using these locations for monitoring to confirm that PCE-impacted groundwater does not migrate beyond the property boundary, this alternative will comply with the cleanup standard and ensure protectiveness.

3.4.4.1.3 Compliance with Applicable State and Federal Laws

This cleanup action alternative is designed to achieve the CUL of 5 µg/L at the Conditional POC, which is compliant with the MCL established under the federal Safe Drinking Water Act.

3.4.4.1.4 Opportunity for Compliance Monitoring

Compliance monitoring would be performed to confirm long-term stability of the plume and residual concentration reduction.

3.4.4.2 Other Evaluation Criteria

3.4.4.2.1 Permanence

Implementing AS/SVE would permanently remove VOCs from the saturated zone. Extracted VOCs would either be directly emitted to the atmosphere under permit or treated (polished) with granular activated carbon which is subsequently disposed of in a licensed disposal facility. Monitoring will track the permanent reduction in toxicity, mobility and volume of PCE present in groundwater at the site.

3.4.4.2.2 Restoration Time Frame

The estimated restoration time frame for Alternative #4 is 3 years. Approximately 1 year would be required for pilot testing, design and construction, followed by operation of the AS/SVE system for a period of 2 years. Monitoring of groundwater would be performed during the design and operation phases. As long as PCE concentrations at the Conditional POC remained below the CUL throughout this process, monitoring would be discontinued and the cleanup action deemed complete at the end of the AS/SVE system operation period.

3.4.4.2.3 Long-Term Effectiveness

AS/SVE permanently reduces PCE concentrations in the source area. Monitoring would be performed to confirm residual concentration reduction.

3.4.4.2.4 Management of Short-Term Risks

The impacted area is limited within the boundaries of the property and there are no current groundwater receptors. Therefore, short-term risks associated with the presence of residual PCE in groundwater are minimal. Short-term risks associated with the implementation of AS/SVE (i.e., capture of sparge gas and prevention of vapor migration) would be addressed through engineering design of the AS/SVE system and routine operation and maintenance. Short-term risks would be further reduced through implementation of IC to prevent exposure to on-site groundwater containing residual PCE.

3.4.4.2.5 Technical and Administrative Implementability

Based on existing information, site conditions appear to be generally favorable for implementation of an AS/SVE remedy. For example:

- The vadose zone and saturated zone are predominantly composed of sand and gravel. Therefore, the permeability should be sufficient to allow for effective sparge radius in the saturated zone and effective SVE radius in the vadose zone. Pilot testing would be required to evaluate effective radius of AS and SVE influence.
- The site stratigraphy is relatively uniform and does not exhibit significant stratification that would inhibit effective sparging or vapor extraction.
- AS/SVE is an appropriate remedial technology for VOCs like PCE.
- The targeted area of remediation is accessible and existing infrastructure does not preclude application of the technology.

Overall, the site stratigraphy and the chemical characteristics of the contaminant suggest that AS/SVE may be a technically feasible alternative for the site.

There are no known administrative barriers to implementing the technology.

3.4.4.2.6 Cost

The following conceptual plan has been developed for Alternative #4 as the basis for estimating the cost to remediate the impacted area described above:

- Feasibility of alternative confirmed through design and implementation of a pilot study.
- One-time, up-front cost to obtain a restrictive covenant (IC).
- Installation of four SVE wells, vacuum blower, GAC, system piping and equipment building.
- AS/SVE system would remain operational for two years.
- Quarterly groundwater monitoring of existing monitoring wells and analysis for VOCs for two years.
- Supplemental sampling for geochemical parameters on a semi-annual basis during groundwater monitoring.
- Quarterly reporting of groundwater monitoring results.

The estimated cost for Alternative #4 is $500,000. Details of the calculation of this estimated cost are provided in Table 4 in Appendix B.

3.4.4.2.7 Consideration of Public Concerns

Community acceptance of the remedial alternative will be evaluated during any public comment period required pursuant to WAC 173-340-600 or WAC 197-11-970 (Determination of Non-Significance) that may involve individuals, community groups, local governments, tribes, federal and state agencies, or other organizations that may have an interest in or knowledge of the site.

Operation of remediation equipment creates potential noise concerns. There are no other known public concerns with this alternative.

3.4.5 Alternative #5 – Source-Area Groundwater Extraction and Treatment and Institutional Control

Alternative #5 would utilize GWET technology focused in the source area near Building #11. GWET can be effective in hydraulic containment of VOC concentrations, as well as removing some PCE mass from the subsurface. GWET would not be applied throughout the impacted area and therefore would also rely on an IC and Conditional POC to achieve protectiveness.

Monitoring would be performed to confirm the effectiveness of the alternative and the reduction of residual PCE concentrations. Institutional controls would be placed in the property deed records to provide additional long-term protection against exposure risks.

3.4.5.1 Threshold Criteria

3.4.5.1.1 Protection of Human Health and Environment

Alternative #5 is assessed to be protective of human health and the environment. Implementing groundwater extraction and treatment (GWET) in the area of highest observed PCE concentration would hydraulically contain PCE concentrations in the presumed source area and reduce the potential for downgradient migration. GWET will also contribute to the reduction of PCE mass in the subsurface. Monitoring would be utilized to confirm concentration reduction Protection of human health and the environment during the remediation will be further enhanced by placing a deed restriction on the property to preclude future activities that could result in exposure to residual PCE in groundwater (e.g., installation of supply wells).

3.4.5.1.2 Compliance with Cleanup Standards

Alternative #5 is anticipated to comply with cleanup standards by attaining cleanup levels at the points of compliance in accordance with WAC 173-240-700(7).

It is not technically possible for the GWET technology to reduce PCE concentrations below the CUL throughout the site within a reasonable time frame. Therefore, the effectiveness of this cleanup action would be determined by monitoring of PCE concentrations at the Conditional POC MW-5 and MW-7 (refer to Section 2.8.1). By using these locations for monitoring to confirm that PCE-impacted groundwater does not migrate beyond the property boundary, this alternative will comply with the cleanup standard and ensure protectiveness.

3.4.5.1.3 Compliance with Applicable State and Federal Laws

This cleanup action alternative is designed to achieve the CUL of 5 µg/L at the Conditional POC, which is compliant with the MCL established under the federal Safe Drinking Water Act.

Washington's Underground Injection Control (UIC) program may apply to this alternative if post-treatment groundwater injection is used and therefore injection wells would need to be registered and authorized by Ecology. In addition, other Applicable, Relevant and Appropriate Requirements (ARARs) may apply including:

- National Pollutant Discharge Elimination System (NPDES) for discharge of treated water to stormwater collection system or surface water.
- Municipal Sanitary Sewer Discharge Permit.

- Puget Sound Air Pollution Control Agency air contaminant discharge permit.

Compliance with these possible ARARs is anticipated.

3.4.5.1.4 Opportunity for Compliance Monitoring

Compliance monitoring would be performed to confirm residual concentration reduction.

3.4.5.2 Other Evaluation Criteria

3.4.5.2.1 Permanence

Implementing GWET in the source area would temporarily contain the area of highest concentration and permanently remove some VOCs from the saturated zone. Extracted VOCs would be treated on site (using carbon or air stripping) and treated groundwater would be discharged under permit. Monitoring would be performed to confirm reduction in toxicity, mobility and volume of PCE present in groundwater at the site.

3.4.5.2.2 Restoration Time Frame

The estimated restoration time frame for Alternative #5 is 6 years[6]. Approximately 1 year would be required for pilot testing, design and construction, followed by operation of the GWET system for a projected period of 5 years. Monitoring of groundwater would be performed during the design and operations phases. As long as PCE concentrations at the Conditional POC remained below the CUL throughout the process, monitoring would be discontinued and the cleanup action deemed complete at the end of the GWET system period of operation.

3.4.5.2.3 Long-Term Effectiveness

GWET does not provide long-term containment of the source area, but will contribute to source mass reduction.

3.4.5.2.4 Management of Short-Term Risks

The impacted area is limited within the boundaries of the property and there are no current groundwater receptors. Therefore, short-term risks associated with the presence of residual PCE in groundwater are minimal. Short-term risks associated with the implementation of GWET would be addressed through engineering design and a site-specific health and safety plan. Short-term risks would be further reduced through implementation of IC to prevent exposure to on-site groundwater containing residual PCE.

[6] It is noted that this estimated time frame may exceed the estimated time frame for MNA alone. The estimated time frame is necessary to allow the GWET remedy to achieve the maximum practicable reduction in concentration possible despite the limited effectiveness of the technology. This is not a contradiction and serves to further illustrate marginal benefit and disproportionate cost of the GWET approach.

3.4.5.2.5 Technical and Administrative Implementability

Based on existing information, site conditions appear to be generally favorable for implementation of a GWET remedy. For example:

- The saturated zone is predominantly composed of sand and gravel. Therefore, the permeability should be sufficient to allow for effective hydraulic capture of the source area. Aquifer testing would be required to evaluate hydrogeologic conditions and develop data necessary for design.
- The site stratigraphy is relatively uniform and does not exhibit significant stratification that would result in a heterogeneous flow field.
- The targeted area of remediation is accessible and existing infrastructure does not preclude application of the technology.

There are no known administrative barriers to implementing the technology.

3.4.5.2.6 Cost

The following conceptual plan has been developed for Alternative #5 as the basis for estimating the cost to remediate the impacted area described above:

- One-time, up-front cost to obtain a restrictive covenant (IC).
- Following pilot testing, design and construction, the GWET system would operate for a period of five years.
- Quarterly groundwater monitoring of existing monitoring wells and analysis for VOCs for 6 years.
- Quarterly reporting of groundwater monitoring results.

The estimated cost for Alternative #5 is $1,130,000. Details of the calculation of this estimated cost are provided in Table 4 in Appendix B.

3.4.5.2.7 Consideration of Public Concerns

Community acceptance of the remedial alternative will be evaluated during any public comment period required pursuant to WAC 173-340-600 0r WAC 197-11-970 (Determination of Non-Significance) that may involve individuals, community groups, local governments, tribes, federal and state agencies, or other organizations that may have an interest in or knowledge of the site.

Operation of remediation equipment creates potential noise concerns. There are no other known public concerns with this alternative.

3.4.6 Alternative #6 – No Action

Under Alternative #6, no cleanup actions beyond the investigations already conducted would occur. No long-term monitoring would be conducted. No institutional controls would be included. Inclusion of the No Action alternative serves as a baseline for the alternatives evaluation.

3.4.6.1 Threshold Criteria

3.4.6.1.1 Protection of Human Health and Environment

Alternative #6 may be protective of human health and the environment. Concentration decline due to natural biodegradation and chemical degradation is expected and it is unlikely that future use of the property would result in direct contact or consumption of on-site groundwater. Therefore, Alternative #6 is expected to be equally protective of human health and the environment as the other alternatives that are being evaluated. However, no controls would be in place to ensure exposure prevention and no monitoring would be conducted to confirm the extent and concentration of residual impacts.

3.4.6.1.2 Compliance with Cleanup Standards

As a result of the natural attenuation of PCE concentrations, it is likely that this alternative would, over time, achieve compliance with the CUL. However, no monitoring would be conducted to confirm compliance.

3.4.6.1.3 Compliance with Applicable State and Federal Laws

This cleanup action alternative is expected to achieve the CUL of 5 µg/L at the Conditional POC, which is compliant with the MCL established under the federal Safe Drinking Water Act.

3.4.6.1.4 Opportunity for Compliance Monitoring

No compliance monitoring would be performed as part of this cleanup action alternative. Therefore, Alternative #6 fails to comply with this threshold requirement.

3.4.6.2 Other Evaluation Criteria

Based on the fact that this alternative does not comply with the threshold requirements, further detailed evaluation of this alternative was not performed.

3.5 DISPROPORTIONATE COST ANALYSIS

For the five alternatives that achieved the threshold requirements, a further evaluation was completed in accordance with the Disproportionate Cost Analysis procedure outlined in WAC 173-340-360(3)(e). This included an estimate of total costs and a qualitative evaluation of the

benefits achieved by the cleanup action as compared to each of the six other evaluation criteria listed in WAC 173-340-360(3)(f). Table 3 in Appendix B provides a summary of the evaluation results for each alternative. Table 4 provides a breakdown of the estimated total costs shown in Table 3. A chart illustrating the relationship between estimated cost and assessed benefit is included as Figure 5 in Appendix A.

In order to compare the proportionality of benefits, the qualitative evaluation results listed in Table 3 were used to score each alternative on each of the evaluation criteria. The scoring was weighted to give the greatest weight to the criteria that are given the greatest emphasis in the MTCA regulations. Consequently, the Protectiveness criterion was given a weighted factor of 0.3 in the scoring. The Permanence and Long-Term Effectiveness criteria were each weighted with a factor of 0.2. The remaining three criteria were given a weight factor of 0.1. The scoring then used a 1-to-10 scale where a score of 10 indicates complete fulfillment of the criterion, a score of 1 indicates complete failure to meet the criterion, and scores of 2 to 9 indicate varying degrees of partial fulfillment of the criterion. The score for each criterion was multiplied by the weighted scoring factor, and the weighted scores were summed to give a total weighted score for each cleanup action alternative. The scoring is presented in Table 5 in Appendix B.

All five of the alternatives were judged to equally achieve the following criteria:

- Protectiveness
- Permanence
- Consideration of Public Concerns

The range of scores for the other three criteria was narrow. As a result, the range of total scores was also quite narrow and all alternatives (excluding No Action) fell between 8.3 and 9.3.

The highest scoring alternative was Alternative #3 (Source Area ISCO and IC) with a score of 9.3 out of a possible 10 points.

The highest cost alternative is Alternative #1 (Site-Wide ISCO) at just over $1.7 million With a score of 9.2 out of 10, the “benefit” achieved by this alternative is 99 percent of the benefit achieved by Alternative #3, while the estimated cost is 591 percent of the cost of Alternative #3. Based on this analysis, the cost for Alternative #1 is deemed to be disproportionate to the benefit achieved.

The second-highest cost alternative was Alternative #5 (Source Area GWET and IC) with an estimated cost of just over $1.1 million. With a score of 8.6 out of 10, the “benefit” achieved by this alternative is 92 percent of the benefit achieved by Alternative #3, while the estimated cost is 390 percent of the cost of Alternative #3.. Based on this analysis, the cost for Alternative #5 is deemed to be disproportionate to the benefit achieved.

The third-highest cost alternative was Alternative #4 (Source Area AS/SVE and IC) with an estimated cost of $500,000. With a score of 8.3 out of 10, the "benefit" achieved by this alternative was thus 89 percent as high as Alternative #3, while the estimated cost of Alternative #4 is 172 percent of the cost for Alternative #3. Based on this analysis, the cost for Alternative #4 is judged to be disproportionate to the benefit achieved.

A comparison of the remaining two alternatives found that Alternative #3 (Source Area ISCO and IC) achieved a "benefit" that is 4 percent higher than that of Alternative #2 (MNA with IC) at a cost that is significantly lower (an estimated $290,000 for Alternative #3 versus $465,000 for Alternative #2. Based on this analysis, Alternative #3 provided the greatest benefit at the lowest cost.

4.0 SELECTION OF PREFERRED CLEANUP ACTION ALTERNATIVE

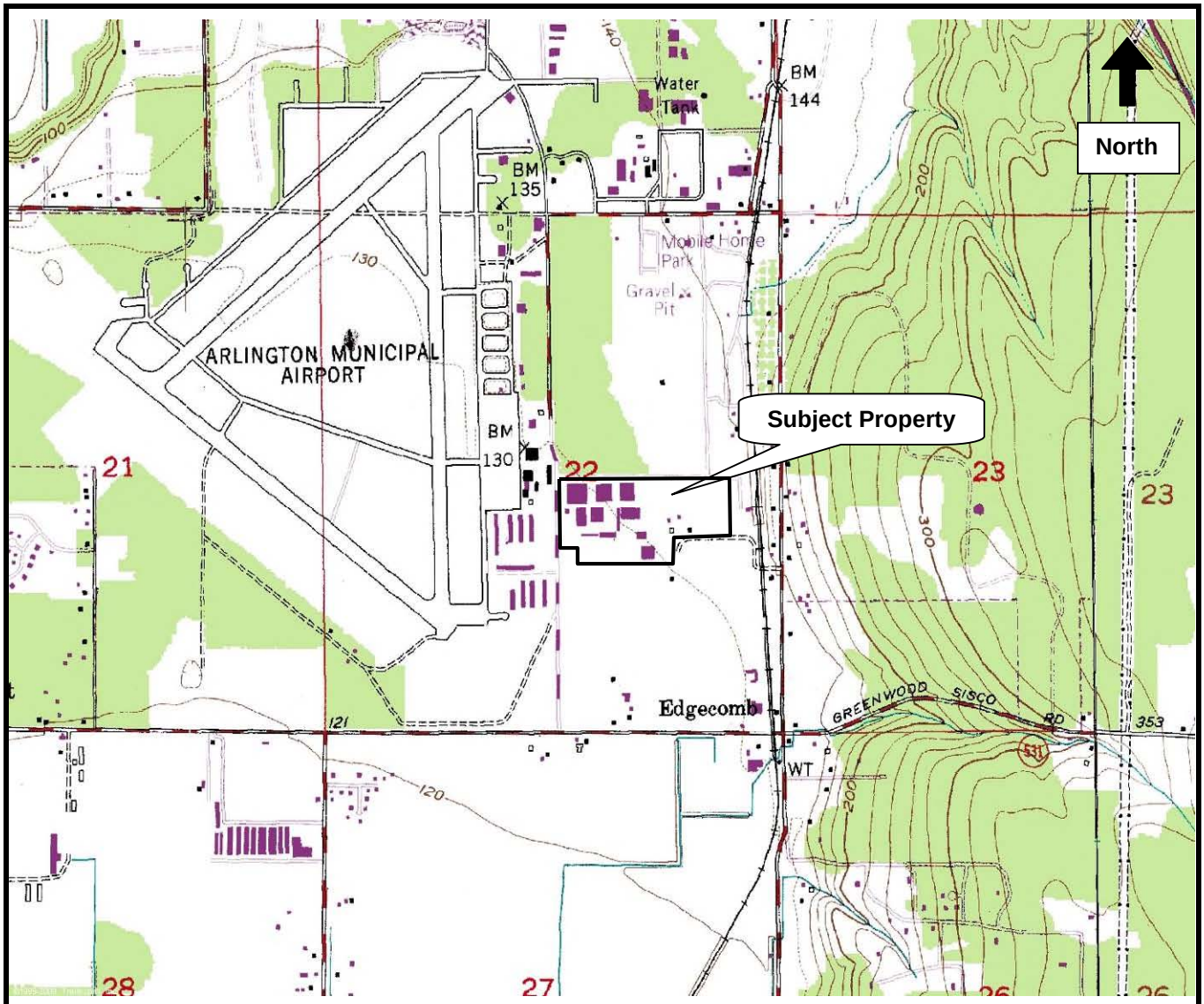
Based on the evaluation of on-site cleanup action alternatives and costs, this analysis has determined that Alternative #3 – Source-Area *in situ* Chemical Oxidation (ISCO) and Institutional Control provides effective protectiveness and is not disproportionately costly. In fact, Alternative #3 provided the highest total benefit with the lowest estimated cost (with the exception of no-action).

Even with treatment in the source area (as proposed in Alternatives 1, 3, 4 and 5), it may not be technically possible and/or may be disproportionately costly for any of the evaluated cleanup technologies to achieve the CUL throughout the site within a reasonable restoration time frame. Therefore, it is likely that any remedy will rely to some degree on the implementation of institutional controls and the use of a conditional point of compliance at MW5 and MW7. Brunswick recognizes that WAC 173-340-360(2)(e)(iii) dictates that cleanup actions should not rely primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action, such as treatment in the source area, for all or part of a site. Brunswick also recognizes that WAC 173-340-720(8) states that when a Conditional POC is proposed it must be demonstrated that "all practicable methods of treatment are to be used in the site cleanup." Consequently, Brunswick has chosen Alternative #3 – Source-Area ISCO and IC as the preferred alternative. Alternative #3 offers the best opportunity for rapid reduction of the highest concentrations of PCE, while also ensuring protectiveness by monitoring to confirm that PCE concentrations at the site continue to diminish and, at the Conditional POC, remain below the CUL.

Alternative #3 requires an IC and Conditional POC. Implementation of an IC and Conditional POC is justified in this case because it is disproportionately costly to attempt a remedy intended to actively reduce concentrations throughout the plume to Method A levels. The significantly higher cost of a site-wide active remedy is not off-set by increased protectiveness. Implementation of an IC will further enhance protectiveness and permanence of the solution by preventing future on-site activities that pose a risk of exposure to on-site groundwater and the Conditional POC allows for effective monitoring of the remedy's protectiveness.

APPENDIX A

FIGURES



Quadrangle Location Map

Job #: 190402025

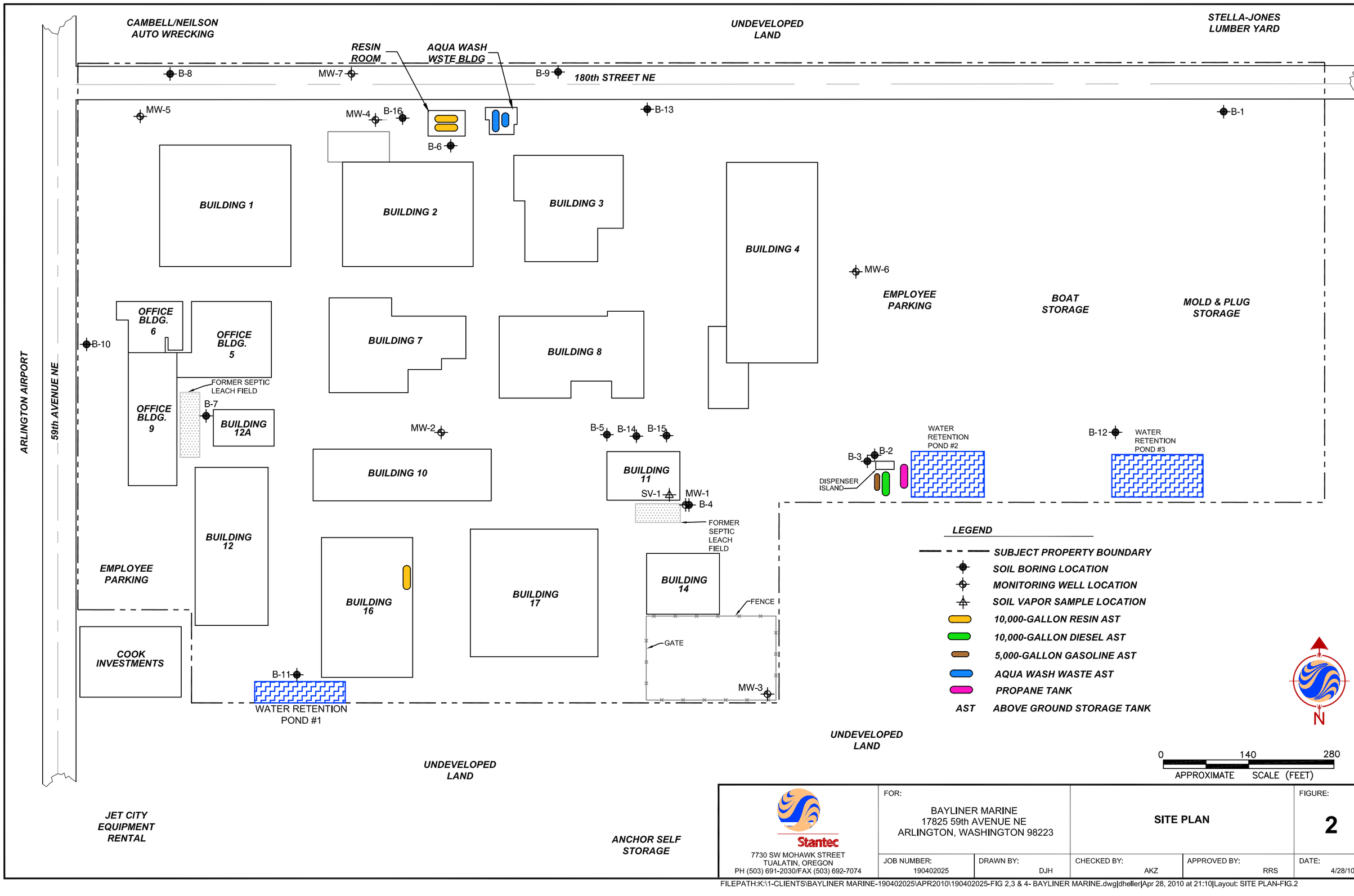
Site Location Map

US Marine
17825 59th Avenue
Arlington, Washington 98223

Stantec

7730 SW Mohawk St.
Tualatin, Oregon
97062

DATE: 03/04/09	***Source: USGS Smokey Point, WA Quad 1981***	***Scale 1:25000***	***Figure: 1***
DWN: Paula Fitzgerald	***APPR: Amy Zach***		***Revision: 0***



Stantec
7730 SW MOHAWK STREET
TUALATIN, OREGON
PH (503) 691-2030/FAX (503) 692-7074

FOR:
BAYLINER MARINE
17825 59th AVENUE NE
ARLINGTON, WASHINGTON 98223

SITE PLAN

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
190402025	DJH	AKZ	RRS	4/28/10

FILEPATH:K:\1-CLIENTS\BAYLINER MARINE-190402025\APR2010\190402025-FIG 2,3 & 4- BAYLINER MARINE.dwg|dheller|Apr 28, 2010 at 21:10|Layout: SITE PLAN-FIG.2

CAMBELL/NEILSON AUTO WRECKING

AQUA WASH WSTE BLDG

RESIN ROOM

UNDEVELOPED LAND

STELLA-JONES LUMBER YARD

180th STREET NE

110.00

111.00

112.00

113.00

114.00

B-8

MW-7 (110.38)

B-9

MW-5 (110.01)

MW-4 (110.80)

B-6

B-1

BUILDING 1

BUILDING 2

BUILDING 3

BUILDING 4

MW-6 (113.19)

EMPLOYEE PARKING

BOAT STORAGE

MOLD & PLUG STORAGE

OFFICE BLDG. 6

OFFICE BLDG. 5

BUILDING 7

BUILDING 8

FORMER SEPTIC LEACH FIELD

B-7

OFFICE BLDG. 9

BUILDING 12A

MW-2 (111.19)

B-5

WATER RETENTION POND #2

WATER RETENTION POND #3

B-3

B-2

DISPENSER ISLAND

BUILDING 10

BUILDING 11

(112.14) MW-1

B-4

FORMER SEPTIC LEACH FIELD

ARLINGTON AIRPORT

59th AVENUE NE

BUILDING 12

EMPLOYEE PARKING

BUILDING 16

BUILDING 17

BUILDING 14

FENCE

GATE

COOK INVESTMENTS

MW-3 (114.62)

WATER RETENTION POND #1

UNDEVELOPED LAND

UNDEVELOPED LAND

JET CITY EQUIPMENT RENTAL

ANCHOR SELF STORAGE

LEGEND

- SUBJECT PROPERTY BOUNDARY
- (112.14) GROUNDWATER ELEVATION (FEET)
- SOIL BORING LOCATIONS
- MONITORING WELL LOCATIONS
- 10,000-GALLON RESIN AST
- 10,000-GALLON DIESEL AST
- 5,000-GALLON GASOLINE AST
- AQUA WASH WASTE AST
- PROPANE TANK
- AST ABOVE GROUND STORAGE TANK

N

0 140 280

APPROXIMATE SCALE (FEET)

Stantec
9400 SW BARNES ROAD
PORTLAND, OREGON
PH (503) 297-1631/FAX (503) 297-5429

FOR:
BAYLINER MARINE
17825 59th AVENUE NE
ARLINGTON, WASHINGTON 98223

SITE PLAN WITH GROUNDWATER ELEVATIONS (DECEMBER 20, 2010)

FIGURE: **3**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
190402126	DJH	AKZ	RRS	1/7/11

FILEPATH:K:\1-CLIENTS\BAYLINER MARINE-190402025\DEC 2010\190402025 (DEC2010)-FIG 2,3 & 4- BAYLINER MARINE.dwg|dheller|Jan 06, 2011 at 23:17|Layout: ELEV-FIG.3

CAMBELL/NEILSON AUTO WRECKING

B-8	PCE
2/18/10	BDL

B-8

MW-7	PCE
2/19/10	BDL
5/26/10	BDL
9/9/10	BDL
12/21/10	BDL

MW-7

AQUA WASH WASTE BLDG

RESIN ROOM

B-9	PCE
2/18/10	BDL

B-9

UNDEVELOPED LAND

STELLA-JONES LUMBER YARD

180th STREET NE

ARLINGTON AIRPORT

59th AVENUE NE

MW-5

MW-5	PCE
12/9/09	BDL
2/18/10	BDL
5/26/10	BDL
9/9/10	BDL
12/21/10	BDL

MW-4	PCE
12/9/09	13
2/18/10	5.3
5/26/10	4.0
9/9/10	5.2
12/21/10	7.7

MW-4

B-16

B-16	PCE
3/19/10	7.3

B-6

B-6	PCE
5/21/09	18

B-13

B-13	PCE
3/19/10	BDL

B-1

B-1	5/20/09
PCE	BDL

BUILDING 1

BUILDING 2

BUILDING 3

BUILDING 4

MW-6	PCE
2/19/10	BDL
5/26/10	BDL
9/9/10	BDL
12/21/10	BDL

MW-6

B-10	PCE
3/19/10	BDL

B-10

OFFICE BLDG. 6

OFFICE BLDG. 5

BUILDING 7

BUILDING 8

EMPLOYEE PARKING

BOAT STORAGE

MOLD & PLUG STORAGE

OFFICE BLDG. 9

FORMER SEPTIC LEACH FIELD

B-7

B-7	PCE
5/21/09	BDL

BUILDING 12A

5 µg/L

40 µg/L

MW-2

B-5	PCE
5/21/09	31

B-5

B-14

B-15

B-15	PCE
3/19/10	40

B-14	PCE
3/19/10	45

B-3	PCE
5/21/09	3.3

B-2	PCE
5/21/09	1.5

B-3

B-2

WATER RETENTION POND #2

DISPENSER ISLAND

B-12	PCE
3/19/10	BDL

B-12

WATER RETENTION POND #3

BUILDING 10

MW-2	PCE
12/9/09	BDL
2/18/10	BDL
5/26/10	BDL
9/9/10	BDL
12/21/10	BDL

BUILDING 11

SV-1

MW-1

B-4

FORMER SEPTIC LEACH FIELD

B-4	PCE
5/21/09	42

MW-1	PCE
12/9/09	59
2/18/10	48
5/26/10	50
9/9/10	57
12/21/10	43

EMPLOYEE PARKING

BUILDING 12

BUILDING 16

BUILDING 17

BUILDING 14

FENCE

GATE

MW-3

MW-3	PCE
12/9/09	BDL
2/18/10	BDL
5/26/10	BDL
9/9/10	BDL
12/21/10	BDL

COOK INVESTMENTS

B-11	PCE
3/19/10	BDL

B-11

WATER RETENTION POND #1

UNDEVELOPED LAND

UNDEVELOPED LAND

JET CITY EQUIPMENT RENTAL

ANCHOR SELF STORAGE

LEGEND

- SUBJECT PROPERTY BOUNDARY
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- SOIL VAPOR SAMPLE LOCATION
- 10,000-GALLON RESIN AST
- 10,000-GALLON DIESEL AST
- 5,000-GALLON GASOLINE AST
- AQUA WASH WASTE AST
- PROPANE TANK
- BDL BELOW DETECTION LIMIT
- PCE TETRACHLOROETHENE
- ESTIMATED CONCENTRATION OF PCE PLUME (5 µg/L)
- ESTIMATED CONCENTRATION OF PCE PLUME (40 µg/L)
- ALL RESULTS IN MIRCOGRAMS PER LITER (µg/L)

N

0 140 280

APPROXIMATE SCALE (FEET)

antec
9400 SW BARNES ROAD
PORTLAND, OREGON
PH (503) 297-1631/FAX (503) 297-5429

FOR:
BAYLINER MARINE
17825 59th AVENUE NE
ARLINGTON, WASHINGTON 98223

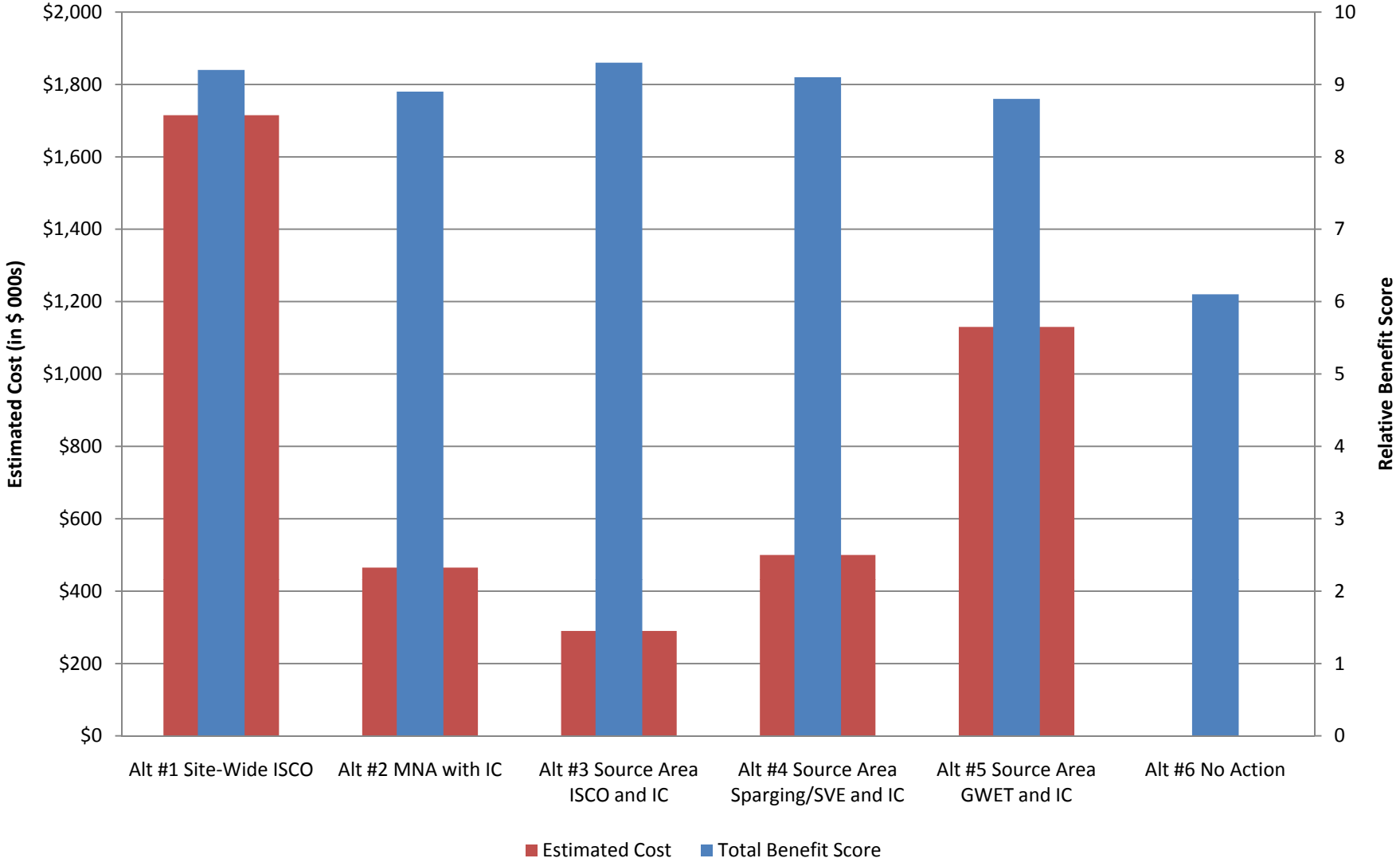
PCE CONCENTRATION IN GROUNDWATER

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
190402126	DJH	AKZ	RRS	1/7/11

FILEPATH:K:\1-CLIENTS\BAYLINER MARINE-190402025\DEC 2010\190402025 (DEC2010)-FIG 2,3 & 4- BAYLINER MARINE.dwg|dheller|Jan 07, 2011 at 14:13|Layout: PCE-FIG.4 (12-21 added)

Figure 5
Comparison of Benefit and Costs
For Cleanup Action Alternatives



APPENDIX B

TABLES

Table 1
Monitoring Well Data
Bayliner Marine - Arlington, Washington

Well No.	Measurement Date	Total Depth (feet)	Top of Casing Elevation (ft MSL)	Screened Interval (ft. bgs)		Screened Interval (ft. MSL)		Depth to Groundwater (Feet)	Groundwater Elevation (Ft. MSL)
				Top	*Bottom*	*Top*	*Bottom*		
MW-1	12/10/2009	29.95	129.42	15	30	114.42	99.42	18.89	110.53
	2/18/2010							16.71	112.71
	5/26/2010							16.51	112.91
	9/9/2010							19.22	110.2
	12/20/2010							17.28	112.14
MW-2	12/10/2009	27.25	129.68	15	30	114.68	99.68	20.02	109.66
	2/18/2010							17.64	112.04
	5/26/2010							17.41	112.27
	9/9/2010							18.48	111.2
	12/20/2010							18.49	111.19
MW-3	12/10/2009	24.3	129.90	10	25	119.9	104.9	16.89	113.01
	2/18/2010							15.02	114.88
	5/26/2010							14.85	115.05
	9/9/2010							19.20	110.70
	12/20/2010							15.28	114.62
MW-4	12/10/2009	28.4	130.42	15	30	115.42	100.42	21.20	109.22
	2/18/2010							18.55	111.87
	5/26/2010							18.24	112.18
	9/9/2010							19.79	110.63
	12/20/2010							19.62	110.80
MW-5	12/10/2009	33.95	130.39	20	35	110.39	95.39	21.96	108.43
	2/18/2010							19.45	110.94
	5/26/2010							19.17	111.22
	9/9/2010							20.50	109.89
	12/20/2010							20.38	110.01
MW-6	2/19/2010	25.00	129.59	15	25	114.59	104.59	16.68	112.91
	5/26/2010							16.51	113.08
	9/9/2010							19.21	110.38
	12/20/2010							16.4	113.19
MW-7	2/19/2010	30.00	131.27	15	30	116.27	101.27	19.90	111.37
	5/26/2010							19.61	111.66
	9/9/2010							21.13	110.14
	12/20/2010							20.89	110.38

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
BAYLINER MARINE PROPERTY, ARLINGTON, WASHINGTON
VOCs IN GROUNDWATER

Sample #	*Sample Date*	*VOCs[1] (µg/L)[2]*	*MTCA Method A Cleanup Level[3] (µg/L)*
B-1	5/20/09	All BDL[4]	N/A
B-2	5/21/09	PCE[5] 1.5 All Others BDL	PCE 5
B-3	5/21/09	PCE 3.3 All Others BDL	PCE 5
B-4	**5/21/09**	**PCE 42** All Others BDL	**PCE 5**
B-5	**5/21/09**	**PCE 31** All Others BDL	PCE 5
B-6	**5/21/09**	**PCE 18**	**PCE 5**
B-7	5/21/09	All BDL	N/A
MW-1	12/09/09	**PCE 59** All Others BDL	**PCE 5**
	2/18/10	**PCE 48** All Others BDL	
	5/26/10	**PCE 50** All Others BDL	
	5/26/10 - DUP	**PCE 46** All Others BDL	
	9/9/10	**PCE 57** All Others BDL	
	9/9/10 – DUP	**PCE 54** All Others BDL	
	12/21/10	**PCE 43** All Others BDL	
MW-2	12/09/09	All BDL	N/A
	2/18/10	All BDL	
	5/26/10	All BDL	
	9/9/10	All BDL	
	12/21/10	All BDL	
MW-3	12/09/09	All BDL	N/A
	2/18/10	All BDL	
	5/26/10	All BDL	
	9/9/10	All BDL	
	12/21/10	All BDL	
MW-4	12/09/09	**PCE 13** **TCE[6] 16** All Others BDL	**PCE 5** TCE 5
	2/18/10	**PCE 5.3** TCE BDL All Others BDL	
	5/26/10	PCE 5.0 All Others BDL	
	9/9/10	**PCE 5.2** All Others BDL	
	12/21/10`	**PCE 7.7** All Others BDL	

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
BAYLINER MARINE PROPERTY, ARLINGTON, WASHINGTON
VOCs IN GROUNDWATER

Sample #	*Sample Date*	*VOCs[1] (µg/L)[2]*	*MTCA Method A Cleanup Level[3] (µg/L)*
MW-5	12/09/09	All BDL	N/A
	2/18/10	All BDL	
	5/26/10	All BDL	
	9/9/10	All BDL	
	12/21/10	All BDL	
MW-6	2/19/10	All BDL	N/A
	5/26/10	All BDL	
	9/9/10	All BDL	
	12/21/10	All BDL	
MW-7	2/19/10	All BDL	N/A
	5/26/10	All BDL	
	9/9/10	All BDL	
	12/21/10	All BDL	
B-8	2/18/10	All BDL	N/A
B-9	2/18/10	All BDL	N/A
B-10	3/19/10	All BDL	N/A
B-11	3/19/10	All BDL	N/A
B-12	3/19/10	All BDL	N/A
B-13	3/19/10	All BDL	N/A
B-14 (16-20')	**3/19/10**	**PCE 45** All Others BDL	**PCE 5**
B-14 (30-34')	**3/19/10**	**PCE 40** All Others BDL	**PCE 5**
B-14 (44-48')	3/19/10	All BDL	N/A
B-15	**3/19/10**	**PCE 40** All Others BDL	**PCE 5**
B-16 (18-22')	3/19/10	PCE 3.9 All Others BDL	N/A
B-16 (32-36')	**3/19/10**	**PCE 7.3** Ethylbenzene 3.4 All Others ND	**PCE 5** Ethylbenzene 700
B-16 (46-50')	3/19/10	All BDL	N/A

NOTES:

Values in bold font exceed applicable cleanup guidelines

1 VOCs = Volatile Organic Compounds by USEPA Method 8260B

2 µg/L = micrograms per liter

3 Method A Groundwater Cleanup Level established under Washington Model Toxics Cleanup Act (MTCA)

4 BDL = Below Detection Limit for the laboratory analytical method

5 PCE = Tetrachloroethylene (aka perchloroethylene)

6 TCE = Trichloroethylene

TABLE 3
EVALUATION OF REMEDIATION ALTERNATIVES FOR DISPROPORTIONAL COST ANALYSIS
BAYLINER MARINE PROPERTY, ARLINGTON, WASHINGTON

	Alternative #1	Alternative #2	Alternative #3	Alternative #4	Alternative #5	Alternative #6
	Site-Wide In Situ Chemical Oxidation	Monitored Natural Attenuation and Institutional Control	Source Area In Situ Chemical Oxidation Combined and Institutional Control	Source Area Air Sparging and Soil Vapor Extraction and Institutional Controls	Source Area Groundwater Pump & Treat and Institutional Controls	No Action
Compliance With MTCA Threshold Requirements [WAC 173-340-360(2)(a)]						
Protective of Human Health & Environment	Yes – rapidly reduces PCE concentrations throughout plume and monitors to confirm long-term stability or residual concentration reduction.	Yes - reduces PCE concentrations over entire site; monitors to confirm long-term stability or concentration reduction, institutional control minimizes long-term risk of exposure to on-site groundwater.	Yes – rapidly reduces PCE concentrations in source area. Monitoring conducted to confirm concentration reductions. Institutional control minimizes long-term risk of exposure to on-site groundwater.	Yes – reduces PCE concentrations in source area. Monitoring conducted to confirm concentration reduction. Institutional control minimizes long-term risk of exposure to on-site groundwater.	Yes – hydraulically contains PCE concentrations in source area and reduces PCE mass in subsurface. Monitoring conducted to confirm concentration reduction, institutional control minimizes long-term risk of exposure to on-site groundwater.	Yes – reduces PCE concentrations over entire site through natural attenuation of contaminants
Complies with applicable cleanup standards	Yes – near-term compliance at conditional property boundary POC and long-term compliance throughout site.	Partially complies with this criterion - near-term compliance at conditional POC. Uncertain if site-wide CUL can be met by this alternative alone.	Yes – near-term compliance at conditional POC.	Yes – near-term compliance at conditional POC.	Yes – near-term compliance at conditional POC.	Yes – near-term compliance at conditional POC.
Complies with applicable state and federal laws	Yes – complies with applicable laws.	Yes – complies with applicable laws.	Yes – complies with applicable laws.	Yes – complies with applicable laws.	Yes – complies with applicable laws.	Yes – complies with applicable laws.
Provides For Compliance Monitoring	Yes	Yes	Yes	Yes	Yes	No
Compliance With Other MTCA Requirements [WAC 173-340-360(2)(b)]						

	Alternative #1	Alternative #2	Alternative #3	Alternative #4	Alternative #5	Alternative #6
	Site-Wide In Situ Chemical Oxidation	Monitored Natural Attenuation and Institutional Control	Source Area In Situ Chemical Oxidation Combined and Institutional Control	Source Area Air Sparging and Soil Vapor Extraction and Institutional Controls	Source Area Groundwater Pump & Treat and Institutional Controls	No Action
Permanence	Yes –results in permanent reduction in toxicity, mobility & volume of VOCs throughout plume to the extent of technical feasibility.	Yes – results in permanent reduction in toxicity, mobility, and volume of PCE	Yes – results in permanent reduction in toxicity, mobility and volume of PCE from source area.	Yes – results in permanent removal of VOCs from source area.	Yes – results in permanent removal of VOCs from source area.	Not evaluated because alternative does not comply with threshold requirements.
Reasonable Restoration Time	Estimated Restoration Time is 4 to 6 years for contaminant reduction; 1 year for pilot testing, design and construction, 1 to 3 years of periodic injection of chemical oxidizer, and 2 years of long-term compliance monitoring.	Estimated Restoration Time is 10 years for long-term compliance monitoring	Estimated Restoration Time is 4 years; 1 year for pilot testing, design and construction, 1 year of periodic injection of chemical oxidizer, and 2 years for monitoring	Estimated Restoration Time is 8 years; 1 year for pilot testing, design and construction, 2 years of system operation; and 5 year of long-term compliance monitoring.	Estimated Restoration Time is 10 years; 1 year for aquifer testing, design and construction, 5 years of system operation; and 5 year of long-term compliance monitoring.	Not evaluated because alternative does not comply with threshold requirements.
Considers Pubic Concerns	No known public concerns	No known public concerns	No known public concerns	Potential noise issues associated with operating machinery	Potential noise issues associated with operating machinery	Not evaluated because alternative does not comply with threshold requirements.
Other Evaluation Factors For Disproportionate Cost Analysis [WAC 173-340-360(3)(f)]						

	Alternative #1	Alternative #2	Alternative #3	Alternative #4	Alternative #5	Alternative #6
	Site-Wide In Situ Chemical Oxidation	Monitored Natural Attenuation and Institutional Control	Source Area In Situ Chemical Oxidation Combined and Institutional Control	Source Area Air Sparging and Soil Vapor Extraction and Institutional Controls	Source Area Groundwater Pump & Treat and Institutional Controls	No Action
Long-Term Effectiveness	Yes – reduces PCE concentrations and monitors to confirm long-term stability or residual concentration reduction	Yes – reduces PCE concentrations; uncertain if site-wide CUL can be met by this alternative alone. Monitors to confirm long-term stability or residual concentration reduction	Yes – reduces PCE concentrations and monitors to confirm long-term stability or residual concentration reduction	Yes – reduces PCE concentrations and monitors to confirm long-term stability or residual concentration reduction	Yes – reduces PCE concentrations and monitors to confirm long-term stability or residual concentration reduction	Not evaluated because alternative does not comply with threshold requirements.
Management of Short-Term Risks During Implementation	Yes – No current groundwater receptors, so short-term risks are minimal. Does not create excess short-term risks that affect Site or adjoining properties.	Yes – No current groundwater receptors, so short-term risks are minimal. Does not create excess short-term risks that affect Site or adjoining properties.	Yes – No current groundwater receptors, so short-term risks are minimal. Does not create excess short-term risks that affect Site or adjoining properties.	Yes – No current groundwater receptors, so short-term risks are minimal. Does not create excess short-term risks that affect at Site or adjoining air.	Yes – hydraulically contains PCE concentrations in source area. Generates treated wastewater that must be discharged to sewer.	Not evaluated because alternative does not comply with threshold requirements.
Technical Implementability	Yes – can be implemented with established technology. Site conditions appear favorable for this technology.	Yes – requires no implementation other than continued monitoring. Site conditions appear favorable for this technology.	Yes – can be implemented with established technology. Site conditions appear favorable for this technology.	Utilizes established technology. Site conditions appear favorable for this technology.	Utilizes established technology. Site conditions appear favorable for this technology.	Not evaluated because alternative does not comply with threshold requirements..
Administrative Implementability	No administrative obstacles	Requires implementation of Institutional Control	Requires implementation of Institutional Control	Requires implementation of Institutional Control	Requires implementation of Institutional Control	Not evaluated because alternative does not comply with threshold requirements.
Total Cost	**$1,715,000**	**$465,000**	**$290,000**	**$500,000**	**$1,310,000**	**$0**

Table 4
Cleanup Action Alternatives - Cost Estimate Summary
(Cost in $000s)
Bayliner Marine - Arlington, Washington

	Alternative #1 Site-Wide ISCO	Alternative #2 MNA and Institutional Control	Alternative #3 Source Area ISCO and Institutional Control	Alternative #4 Source area AS/SVE and Institutional Control	Alternative #5 Source Area Pump and Treat Institutional Control
Pre-Remediation					
Pilot Testing and Design	$ 25	$ 5	$ 25	$ 25	$ 25
Pre-Remediation Time Period (Yrs)	1	0.5	1	1	1
Pre-Remediation Total	**$ 25**	**$ 5**	**$ 25**	**$ 25**	**$ 25**
Remediation					
Source Area ISCO			$ 165		
Plume ISCO	$ 1,600				
Source Area AS/SVE				$ 240	
Source Area Pump and Treat					$ 500
Remediation Time Period (Yrs)	1	9.5	1	2	5
Remediation Total	**$ 1,600**	**$ -**	**$ 165**	**$ 240**	**$ 500**
O&M					
O&M	**$ -**	**$ -**	**$ -**	$ 45	$ 65
Duration (years)	**0**	**0**	**0**	2	5
O&M Total	**$ -**	**$ -**	**$ -**	**$ 90**	**$ 325**
Monitoring					
Groundwater Monitoring and reporting	$ 45	$ 45	$ 45	$ 45	$ 45
Duration (years)	2	10	2	3	6
Monitoring Total	**$ 90**	**$ 450**	**$ 90**	**$ 135**	**$ 270**
Institutional Controls	**$ -**	**$ 10**	**$ 10**	**$ 10**	**$ 10**
Grand Total	**$ 1,715**	**$ 465**	**$ 290**	**$ 500**	**$ 1,130**
Total Restoration Time Frame (Yrs)	**2**	**10**	**2**	**3**	**6**

TABLE 5
COMPARISON OF BENFTIS AND COSTS FOR CLEANUP ACTION ALTERNATIVES
DISPROPORTIONATE COST ANALYSIS
FORMER BAYLINER MARINE FACILITY, ARLINGTON, WASHINGTON

Benefits Summary Factor	Weighting	Alt #1 Site-Wide ISCO and MNA Rank	Alt #1 Value	Alt #2 MNA with IC Rank	Alt #2 Value	Alt #3 Source Area ISCO with Rank	Alt #3 Value	Alt #4 Source Area Sparging & Rank	Alt #4 Value	Alt #5 Source Area Pump & Treat Rank	Alt #5 Value	Alt #6 No Action Rank	Alt #6 Value
Protectiveness	0.3	10	3	10	3	10	3	10	3	10	3	4	1.2
Permanence	0.2	10	2	10	2	10	2	10	2	10	2	10	2
Long-Term Effectiveness	0.2	9	1.8	6	1.2	8	1.6	8	1.6	7	1.4	4	0.8
Mgmt of Short-Term Risks	0.1	10	1	10	1	10	1	7	0.7	8	0.8	1	0.1
Technical & Administrative Implementability	0.1	4	0.4	7	0.7	7	0.7	7	0	4	0.4	10	1
Considers Public Concerns	0.1	10	1	10	1	10	1	10	1	10	1	10	1
Total Benefits Score	1		9.2		8.9		9.3		8.3		8.6		6.1
Benefits Score Comparison			99%		96%		100%		89%		92%		66%
Estimated Cost			$ 1,715,000		$ 465,000		$ 290,000		$ 500,000		$ 1,130,000		$0
Cost Comparison			591%		160%		100%		172%		390%		

Qualitative Ranking Scale

Fails To Fulfill Criteria	Partially Fulfills Criteria														Completely Fulfills Criteria
1	2	3	4		5		6		7		8		9		10

APPENDIX C

GROUNDWATER SAMPLING DATA SHEETS

MAY, SEPTEMBER AND DECEMBER 2010

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road, Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0001 Date: 05-26-10 Well No: MW-1

Facility Name: Brunswick - Bayliner Temperture: low 50s °F or °C

Field Personnel: ACZ Weather: showers

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 30.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 16.51 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 13.49 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristalic pump
disposable bailer / trash pump / pvc hand bail / in-line pump / single valve sampler / syringe

Duration: ~~3~~ 10 mins

OBSERVATIONS:

1038 start

	Time	Turbidity	pH	Temp.	Conduct.	DO	ORP	SWL
1st Volume:	1039	low	5.47	52.09	157	4.49	197.2	
2nd Volume:	1042	clr	4.87	51.52	126	3.51	141.2	
3rd Volume:	1045	clr	4.89	51.49	122	3.45	139.1	
4th Volume:	1049	clr	4.84	51.50	120	3.47	132.6	
5th Volume:								

Total Volume of Water Purged From Well: <1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 16.56 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-1	1055	(3) 40 ml VOAs	HCl
DUP-1	DUP-1		

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road, Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0001 Date: 05-26-10 Well No: MW-2

Facility Name: Brunswick - Bayliner Temperture: low 50s °F or °C

Field Personnel: AC2 Weather: showers

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 29.70 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 17.41 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 12.29 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (mililiters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow - peristalic pump ~~disposable bailer / trash pump / pvc hand bail~~ ~~In-line pump / single valve sampler / syringe~~ Duration: 10 mins

OBSERVATIONS:

1009 start

	Time	Turbidity	pH	Temp.	Conduct.	DO	ORP	SWL
1st Volume:	1011	low	4.54	53.12	154	3.53	213.2	
2nd Volume:	1014	clr	4.45	53.05	133	3.96	218.7	
3rd Volume:	1017	clr	4.45	53.09	136	4.00	219.3	
4th Volume:	1021	clr	4.49	53.00	141	3.92	219.8	
5th Volume:								

Total Volume of Water Purged From Well: <1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED: Depth to Water at time of sample collection: 17.43 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-2	1027	(3) 40ml VOAs	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road, Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0001 Date: 05-26-10 Well No: MW-3

Facility Name: Brunswick - Bayliner Temperture: low 50s °F or °C

Field Personnel: ACZ Weather: showers & cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 23.91 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 14.85 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 9.06 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow - peristalic pump ~~disposable bailer / trash pump / pvc/hand bail~~ ~~in-line pump / single valve sampler / syringe~~ Duration: 10mins

OBSERVATIONS:

start 720

	Time	Turbidity	pH	Temp.	Conduct.	DO	ORP	SWL
1st Volume:	728	No/clr	4.51	49.08	212	7.21	239.1	
2nd Volume:	725	↓	4.01	49.17	260	7.43	289.9	
3rd Volume:	728	↓	3.75	49.11	262	6.94	287.1	
4th Volume:	731	↓	3.86	49.15	249	6.90	279.9	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 14.89 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-3	0740	(3) 40ml VOAs	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road, Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0001 Date: 05-26-10 Well No: MW-4

Facility Name: Brunswick - Bayliner Temperture: low 50s °F or °C

Field Personnel: ACZ Weather: showers

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 28.40 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 18.24 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 10.16 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow - peristalic pump
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: 10 mins

OBSERVATIONS:

0940 start

	Time	Turbidity	pH	Temp.	Conduct.	DO	ORP	SWL
1st Volume:	0942	low	5.26	55.58	171	3.10	174.1	
2nd Volume:	0945	clr	5.18	55.50	134	2.82	162.6	
3rd Volume:	0948	clr	5.11	55.56	135	2.86	165.3	
4th Volume:	0951	clr	5.09	55.54	141	2.94	158.3	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 18.27 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-4	0956	(3) 40ml VOAs	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road, Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0001 Date: 05-26-10 Well No: MW-5

Facility Name: Brunswick - Bayliner Temperture: Low 50s °F or °C

Field Personnel: ACZ Weather: showers

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 33.70 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 19.17 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 14.53 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow-peristalic pump Duration: 10 mins

disposable bailer / trash pump / pvc hand bail / in-line pump / single valve sampler / syringe

OBSERVATIONS:

09 05 start

	Time	Turbidity	pH	Temp. °F	Conduct.	DO	ORP	SWL
1st Volume:	0906	low	4.97	54.92	238	3.74	129.4	
2nd Volume:	0909	low	5.18	54.41	232	3.04	114.7	
3rd Volume:	0912	clr	5.24	54.43	246	2.96	108.9	
4th Volume:	0915	clr	5.26	54.44	227	2.85	105.9	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED: Depth to Water at time of sample collection: 19.13 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-5	0920	(3) 40ml VOAs	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road, Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0001 Date: 05-26-10 Well No: MW-6

Facility Name: Brunswick - Bayliner Temperture: low 50s °F or °C

Field Personnel: ACZ Weather: showers

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 25.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 16.51 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 8.49 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow w/ peristaltic pump Duration: 10 mins

disposable bailer / trash pump / pvc hand bail / in-line pump / single valve sampler / syringe

OBSERVATIONS:

757 start

	Time	Turbidity	pH	Temp.	Conduct. (µS/cm²)	DO (mg/L)	ORP	SWL
1st Volume:	0800	Clr	4.66	50.56	108	4.10	174.6	
2nd Volume:	0803		4.62	50.55	113	3.92	174.4	
3rd Volume:	0806		4.62	50.40	125	3.89	172.3	
4th Volume:	0809	↓	4.67	50.38	125	3.91	169.9	16.67
5th Volume:								

Total Volume of Water Purged From Well: <1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 16.67 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-6	0813	(3) 40ml VOAs	HCl

COMMENTS: Well monument - small bolts (13mm)

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road, Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0001 Date: 05-26-16 Well No: MW-7

Facility Name: Brunswick - Bayliner Temperture: low 50s °F or °C

Field Personnel: ACZ Weather: showers

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 30.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 19.61 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 10.39 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (mililiters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow - peristaltic pump (disposable bailer / trash pump / pvc hand bail / in-line pump / single valve sampler / syringe) Duration: 10 mins

OBSERVATIONS:

0831 start

	Time	Turbidity	pH	Temp.	Conduct.	DO	ORP	SWL
1st Volume:	0836	clr	4.90	54.28	526	2.56	236.4	
2nd Volume:	0839	"	4.80	54.29	131	1.94	204.9	
3rd Volume:	0842	"	4.76	54.27	47	1.95	202.6	
4th Volume:	0845	V	4.71	54.17	104	2.10	233.1	
5th Volume:								

Total Volume of Water Purged From Well: <1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-7	0850	(3) 40ml VOAs	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0003 Date: 9/9/10 Well No: MW-1

Facility Name: Brunswick - Bayliner Temperture: 60 °F or °C

Field Personnel: JLN Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 29.83 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 19.22 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 10.61 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristaltic pump
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: ____

OBSERVATIONS:

Start 1148

	Time	Turbidity	pH	Temp.	Conduct.	DO %	ORP	SWL
1st Volume:	1149	low	6.82	55.85	0.105	88.1	173.3	
2nd Volume:	1152	low	6.64	55.99	0.104	74.4	183.7	
3rd Volume:	1155	low	6.50	55.89	0.104	69.0	198.3	
4th Volume:	1158	low	6.47	55.54	0.105	68.4	200.6	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 19.25 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-1	1200	3/40 ml	HCl
Dup-1	1202	3/40 ml	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0003 Date: 9/9/10 Well No: MW-2

Facility Name: Brunswick - Bayliner Temperture: 60 (°F) or °C

Field Personnel: JLN Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 29.50 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 18.48 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 11.02 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (mililiters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristaltic pump
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: ____

OBSERVATIONS:

Start 1122

	Time	Turbidity	pH	Temp.	Conduct.	DO %	ORP	SWL
1st Volume:	1123	low	6.57	57.04	0.227	161.3	183.4	
2nd Volume:	1126	clr	6.39	57.61	0.232	52.3	198.0	
3rd Volume:	1129	clr	6.33	57.99	0.232	50.2	202.7	
4th Volume:	1132	clr	6.28	59.14	0.232	49.1	204.4	
5th Volume:								

Total Volume of Water Purged From Well: <1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 18.50 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-2	1135	3/40 ml	HCl

COMMENTS:

Casing Capacities:
2-inch hole.....0.16 gal/lin ft.
4-inch hole.....0.65 gal/lin ft.
6.5-inch hole.....1.70 gal/lin ft.
8-inch hole.....2.60 gal/lin ft.
10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____
Original Water Column: ____ x 0.80 = -( )
Collect sample when Depth to Water measures
Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting
9400 SW Barnes Road Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0003 Date: 9/9/10 Well No: MW-3

Facility Name: Brunswick - Bayliner Temperture: 60 (°F) or °C

Field Personnel: JLN Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 23.96 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 19.20 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 4.76 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristaltic pump
disposable bailer / trash pump / pvc hand bail / in-line pump / single valve sampler / syringe

Duration: 10 mins

OBSERVATIONS:

0910 Start

	Time	Turbidity	pH	Temp. °F	Conduct.	DO %	ORP	SWL
1st Volume:	0911	low	8.30	52.20	0.157	79.7	28.7	
2nd Volume:	0914	clr	7.95	52.50	0.114	100.9	47.3	
3rd Volume:	0917	clr	7.70	52.47	0.101	74.0	61.8	
4th Volume:	0920	clr	7.58	52.41	0.098	76.0	68.5	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 19.27 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-3	0925	(3) 40ml VOAs	HCl

COMMENTS:

Casing Capacities:
2-inch hole.....0.16 gal/lin ft.
4-inch hole.....0.65 gal/lin ft.
6.5-inch hole.....1.70 gal/lin ft.
8-inch hole.....2.60 gal/lin ft.
10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____
Original Water Column: ____ x 0.80 = -( )
Collect sample when Depth to Water measures
Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0003 Date: 9/9/10 Well No: MW-4

Facility Name: Brunswick - Bayliner Temperture: 60 (°F) or °C

Field Personnel: JLN Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 28.50 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 19.79 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 8.71 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (mililiters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristaltic pump
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: 10mins

OBSERVATIONS:

Start 1057

	Time	Turbidity	pH	Temp.	Conduct.	DO %	ORP	SWL
1st Volume:	1058	low	7.14	60.01	0.117	109.2	141.2	
2nd Volume:	1101	clr	7.08	59.69	0.116	72.9	145.2	
3rd Volume:	1104	clr	6.90	60.03	0.117	70.1	161.9	
4th Volume:	1107	clr	6.88	60.08	0.117	69.2	165.2	
5th Volume:								

Total Volume of Water Purged From Well: < 1gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 19.83 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-4	1110	3/40ml	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0003 Date: 9/9/10 Well No: MW-5

Facility Name: Brunswick - Bayliner Temperture: 60 (°F) or °C

Field Personnel: JLN Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 33.75 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 20.50 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 13.25 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristaltic pump
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: 10 mins

OBSERVATIONS:

Start 1006

	Time	Turbidity	pH 7.39	Temp.	Conduct.	DO %	ORP	SWL
1st Volume:	1007	low	~~58.40~~	58.40	0.110	141.3	100.5	
2nd Volume:	1010	low	7.28	58.40	0.109	74.1	107.7	
3rd Volume:	1013	low	7.12	58.65	0.108	67.6	119.6	
4th Volume:	1016	clr	7.02	58.84	0.108	64.9	130.9	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 20.51 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-5	1020	3/40 ml	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0003 Date: 9/9/10 Well No: MW-6

Facility Name: Brunswick - Bayliner Temperture: 60 (°F) or °C

Field Personnel: JLN Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 25.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 19.21 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 5.79 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (mililiters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristaltic pump
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: 10 mins

OBSERVATIONS:

Start 0937

	Time	Turbidity	pH	Temp. F	Conduct.	DO	ORP	SWL
1st Volume:	0938	low	7.67	55.48	0.087	200.5	79.4	
2nd Volume:	0941	clr	7.50	55.45	0.088	88.3	85.4	
3rd Volume:	0944	clr	7.42	55.50	0.091	~~91.0~~ 75.5	91.4	
4th Volume:	0947	clr	7.31	55.41	0.093	74.0	97.4	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 19.23 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-6	0950	3 / 40 ml	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

Stantec Consulting

9400 SW Barnes Road Suite 200, Portland, OR 97225

Stantec Project No.: 190402025.200.0003 Date: 9/9/10 Well No: MW-7

Facility Name: Brunswick - Bayliner Temperture: 60 °F or °C

Field Personnel: JLN Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 30.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 21.13 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) ~~8.87~~ FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow peristaltic pump
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: 10 mins

OBSERVATIONS:

Start 1033

	Time	Turbidity	pH 7.20	Temp.	Conduct.	DO 2	ORP	SWL
1st Volume:	1034	low	~~59.15~~	59.15	0.088	137.5	127.5	
2nd Volume:	1037	clr	7.07	59.51	0.088	71.8	137.3	
3rd Volume:	1040	clr	7.00	59.77	0.088	70.1	143.5	
4th Volume:	1043	clr	6.99	59.65	0.088	69.7	147.6	
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 21.16 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-7	1045	3/40 ml	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

SECOR International

7730 SW Mohawk, Tualatin, OR 97062

Stantec Project No.: 193702126.200.0001 Date: 12/21/10 Well No: MW-1

Facility Name: Bayliner Temperture: 45 (°F) or °C

Field Personnel: Janet Nash Weather: Partly cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 30.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 17.38 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 12.62 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water		=	PV (mililiters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	12.62	=	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water		=	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water		=	PV (gallons)

Purge Method: low flow
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration:

OBSERVATIONS:

	Time	Turbidity	pH	Temp. °C	Conduct.	DO	ORP	SWL
1st Volume:	1111	low	6.42	11.21	0.063	9.71	184.1	
2nd Volume:	1115	low	6.37	11.35	0.065	9.89	184.3	
3rd Volume:	1119	low	6.36	11.41	0.066	10.11	185.5	
4th Volume:								
5th Volume:								

Total Volume of Water Purged From Well: <1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 17.46 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-1	1125	40ml / 3	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well:

Original Water Column: _____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to:

GROUNDWATER SAMPLING DATA SHEET

SECOR International

7730 SW Mohawk, Tualatin, OR 97062

Stantec Project No.: 190402126.200.0001 Date: 12/21/10 Well No: MW-2

Facility Name: Bayliner Marine Temperture: 45° (°F) or °C

Field Personnel: Bret+Nash Weather: Partly Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 29.70 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 18.49 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 11.21 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow
disposable bailer / trash pump / pvc hand bail / in-line pump / single valve sampler / syringe

Duration: ____

OBSERVATIONS:

	Time	Turbidity	pH	Temp. °C	Conduct.	DO	ORP	SWL
1st Volume:	1053	low	6.05	11.97	0.141	7.30	216.6	
2nd Volume:	1057	low	5.93	12.57	0.133	6.10	218.5	
3rd Volume:	1101	low	5.88	12.70	0.131	5.95	220.1	
4th Volume:								
5th Volume:								

Total Volume of Water Purged From Well: 2.1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 18.55 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-2	1105	40ml / 3	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

SECOR International

7730 SW Mohawk, Tualatin, OR 97062

Stantec Project No.: 190402126.200.0001 Date: 12/21/10 Well No: MW-3

Facility Name: Bayliner Marine Temperture: 40° (°F or °C)

Field Personnel: Janet Nash Weather: Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 23.91 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 15.28 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 8.63 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: Peristaetic pump - low flow (disposable bailer / trash pump / pvc hand bail / in-line pump / single valve sampler / syringe) Duration: ____

OBSERVATIONS:

	Time	Turbidity	pH	Temp. °C	Conduct.	DO mg/L	ORP	SWL
1st Volume:	0856	low	7.46	9.52	0.075	11.56	130.9	
2nd Volume:	0900	med	6.69	9.97	0.072	11.32	151.2	
3rd Volume:	0904	med	6.49	10.13	0.071	11.16	163.5	
4th Volume:								
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 15.19 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-3	0910	40ml / 3	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

SECOR International

7730 SW Mohawk, Tualatin, OR 97062

Stantec Project No.: 193702126.200.0001 Date: 12/21/10 Well No: MW-4

Facility Name: Bayliner Marine Temperture: 45 °F or °C

Field Personnel: Janet Nash Weather: Partly Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 28.40 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 19.62 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 8.78 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: ____

OBSERVATIONS:

	Time	Turbidity	pH	Temp. °C	Conduct.	DO	ORP	SWL
1st Volume:	1028	low	6.29	13.75	0.111	9.16	200.1	
2nd Volume:	1031	low	6.32	13.82	0.112	9.21	199.1	
3rd Volume:	1035	low	6.35	14.11	0.110	9.25	199.0	
4th Volume:								
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 19.70 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-4	1040	40ml / 3	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

SECOR International

7730 SW Mohawk, Tualatin, OR 97062

Stantec Project No.: 190402176.200.0001 Date: 12/21/10 Well No: MW-5

Facility Name: Bayliner Marine Temperture: 40 °F or °C

Field Personnel: Janet Nesh Weather: Partly Cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 33.70 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 20.38 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 13.32 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (mililiters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: ____

OBSERVATIONS:

	Time	Turbidity	pH	Temp. °C	Conduct.	DO mg/L	ORP	SWL
1st Volume:	0945	low	6.34	12.88	0.090	8.67	184.1	
2nd Volume:	0948	low	6.44	13.59	0.090	8.85	184.1	
3rd Volume:	0951	low	6.44	14.09	0.089	8.72	186.2	
4th Volume:								
5th Volume:								

Total Volume of Water Purged From Well: 2 1gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 20.43 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-5	0955	40ml / 3	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

SECOR International

7730 SW Mohawk, Tualatin, OR 97062

Stantec Project No.: 190402126.200.0001 Date: 12/21/10 Well No: MW-6

Facility Name: Bayliner Marine Temperture: 40 (F) or °C

Field Personnel: Janet Nash Weather: partly cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 25.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 16.40 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 8.60 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: Peristaltic low flow
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: ____

OBSERVATIONS:

	Time	Turbidity	pH	Temp. °C	Conduct.	DO	ORP	SWL
1st Volume:	0922	low	6.28	10.44	0.073	10.23	182.9	
2nd Volume:	0926	low	6.32	10.79	0.074	10.58	182.5	
3rd Volume:	0930	clr	6.26	10.90	0.074	10.62	187.3	
4th Volume:								
5th Volume:								

Total Volume of Water Purged From Well: < 1 gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 16.51 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-6	0935	40 ml / 3	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

GROUNDWATER SAMPLING DATA SHEET

SECOR International

7730 SW Mohawk, Tualatin, OR 97062

Stantec Project No.: 193402126.200.0001 Date: 12/21/10 Well No: MW-7

Facility Name: Bayliner Marine Temperture: 40 °F or °C

Field Personnel: Janet Nash Weather: Partly cloudy

FIELD MEASUREMENTS:

A. Total Depth (TD) of Well from TOC: 30.00 FT. or IN.

C Static Water Level (SWL) Below Top of Casing (TOC): 20.89 FT. or IN.

D. Height of Water Column in Casing: (h = TD-SWL) 9.11 FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column

		3 Well Vols.	5 Well Vols.					
5/8" diameter	=	21.8 mL/ft		X	feet of water	____	= ____	PV (milliliters)
2" diameter	=	0.5 gal/ft	0.82 gal/ft	X	feet of water	____	= ____	PV (gallons)
4" diameter	=	2.0 gal/ft	3.25 gal/ft	X	feet of water	____	= ____	PV (gallons)
6" diameter	=	4.4 gal/ft	7.35 gal/ft	X	feet of water	____	= ____	PV (gallons)

Purge Method: low flow
disposable bailer / trash pump / pvc hand bail
in-line pump / single valve sampler / syringe

Duration: ____

OBSERVATIONS:

	Time	Turbidity	pH	Temp. °C	Conduct.	DO mg/L	ORP	SWL
1st Volume:	1004	low	6.30	13.35	0.064	9.32	184.8	
2nd Volume:	1006	low	5.99	14.01	0.063	9.16	204.4	
3rd Volume:	1010	low	5.97	14.04	0.062	9.14	205.4	
4th Volume:								
5th Volume:								

Total Volume of Water Purged From Well: 2 1gal

Purge Water Stored/Disposed of Where/How: On-Site 55-gallon drum

SAMPLES COLLECTED:

Depth to Water at time of sample collection: 20.93 >80%

Sample Numbers(s):	Time:	Size/Number of Container(s):	Preservative:
MW-7	1015	40ml / 3	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.

4-inch hole.....0.65 gal/lin ft.

6.5-inch hole.....1.70 gal/lin ft.

8-inch hole.....2.60 gal/lin ft.

10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: ____

Original Water Column: ____ x 0.80 = -( )

Collect sample when Depth to Water measures

Less than or equal to: ____

APPENDIX D

INDOOR AIR LABORATORY ANALYTICAL REPORT - APRIL 2010

Air Toxics LTD.
Laboratory Services Since 1989

4/12/2010

Ms. Alyssa Johnson
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: Bayliner Marine
Project #: 786003.010.012
Workorder #: 1004211

Dear Ms. Alyssa Johnson

The following report includes the data for the above referenced project for sample(s) received on 4/9/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1004211

Work Order Summary

CLIENT:	Ms. Alyssa Johnson Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	**BILL TO:**	Ms. Alyssa Johnson Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020
PHONE:	425-329-0264	**P.O. #**	
FAX:	425-778-6409	**PROJECT #**	786003.010.012 Bayliner Marine
DATE RECEIVED:	04/09/2010	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	04/12/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	Building 11A	Modified TO-15 SIM	3.5 "Hg	5 psi
02A	Building 11B	Modified TO-15 SIM	5.0 "Hg	5 psi
03A	Ambient Air	Modified TO-15 SIM	4.0 "Hg	5 psi
04A	Building 14	Modified TO-15 SIM	4.0 "Hg	5 psi
04AA	Building 14 Lab Duplicate	Modified TO-15 SIM	4.0 "Hg	5 psi
05A	Building 4	Modified TO-15 SIM	4.0 "Hg	5 psi
06A	Building 17	Modified TO-15 SIM	5.5 "Hg	5 psi
07A	Building 8	Modified TO-15 SIM	8.0 "Hg	5 psi
08A	Building 10	Modified TO-15 SIM	4.5 "Hg	5 psi
09A	Lab Blank	Modified TO-15 SIM	NA	NA
10A	CCV	Modified TO-15 SIM	NA	NA
11A	LCS	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Linda D. Fruman DATE: 04/12/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 SIM
Landau Associates, Inc.
Workorder# 1004211

Eight 6 Liter Summa Canister (SIM Certified) samples were received on April 09, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: Building 11A

Lab ID#: 1004211-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.076	0.089	0.24	0.28
Toluene	0.030	0.034	0.11	0.13
Tetrachloroethene	0.030	0.036	0.21	0.24

Client Sample ID: Building 11B

Lab ID#: 1004211-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.080	0.089	0.26	0.28
Toluene	0.032	0.038	0.12	0.14
Tetrachloroethene	0.032	0.034	0.22	0.23

Client Sample ID: Ambient Air

Lab ID#: 1004211-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.078	1.9	0.25	6.0
Toluene	0.031	1.3	0.12	5.0
Tetrachloroethene	0.031	0.049	0.21	0.33
Ethyl Benzene	0.031	0.26	0.13	1.1
m,p-Xylene	0.062	0.86	0.27	3.8
o-Xylene	0.031	0.29	0.13	1.3

Client Sample ID: Building 14

Lab ID#: 1004211-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.078	0.34	0.25	1.1
Toluene	0.031	0.040	0.12	0.15
Tetrachloroethene	0.031	0.18	0.21	1.2
Ethyl Benzene	0.031	0.030 J	0.13	0.13 J
m,p-Xylene	0.062	0.12	0.27	0.54
o-Xylene	0.031	0.082	0.13	0.35

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: Building 14 Lab Duplicate

Lab ID#: 1004211-04AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.078	0.33	0.25	1.0
Toluene	0.031	0.040	0.12	0.15
Tetrachloroethene	0.031	0.18	0.21	1.2
m,p-Xylene	0.062	0.12	0.27	0.53
o-Xylene	0.031	0.080	0.13	0.35

Client Sample ID: Building 4

Lab ID#: 1004211-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.078	0.18	0.25	0.56
Toluene	0.031	0.11	0.12	0.43

Client Sample ID: Building 17

Lab ID#: 1004211-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.082	0.10	0.26	0.32
Toluene	0.033	0.092	0.12	0.35

Client Sample ID: Building 8

Lab ID#: 1004211-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.092	0.14	0.29	0.45
Toluene	0.037	0.066	0.14	0.25

Client Sample ID: Building 10

Lab ID#: 1004211-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	0.091	0.25	0.29
Toluene	0.032	0.051	0.12	0.19
m,p-Xylene	0.063	0.11	0.27	0.47

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: Building 10

Lab ID#: 1004211-08A

o-Xylene	0.032	0.063	0.14	0.28

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 11A

Lab ID#: 1004211-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040906sim**	**Date of Collection: 4/8/10 2:40:00 PM**	
Dil. Factor:	**1.52**	**Date of Analysis: 4/9/10 05:54 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.039	Not Detected
1,1-Dichloroethene	0.015	Not Detected	0.060	Not Detected
1,1-Dichloroethane	0.030	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.030	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.030	Not Detected	0.16	Not Detected
Benzene	0.076	0.089	0.24	0.28
1,2-Dichloroethane	0.030	Not Detected	0.12	Not Detected
Trichloroethene	0.030	Not Detected	0.16	Not Detected
Toluene	0.030	0.034	0.11	0.13
1,1,2-Trichloroethane	0.030	Not Detected	0.16	Not Detected
Tetrachloroethene	0.030	0.036	0.21	0.24
Ethyl Benzene	0.030	Not Detected	0.13	Not Detected
m,p-Xylene	0.061	Not Detected	0.26	Not Detected
o-Xylene	0.030	Not Detected	0.13	Not Detected
1,1,2,2-Tetrachloroethane	0.030	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.60	Not Detected
Methyl tert-butyl ether	0.15	Not Detected	0.55	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 11B

Lab ID#: 1004211-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040907sim**	**Date of Collection:**	**4/8/10 2:42:00 PM**
Dil. Factor:	**1.61**	**Date of Analysis:**	**4/9/10 06:43 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Benzene	0.080	0.089	0.26	0.28
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Toluene	0.032	0.038	0.12	0.14
1,1,2-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Tetrachloroethene	0.032	0.034	0.22	0.23
Ethyl Benzene	0.032	Not Detected	0.14	Not Detected
m,p-Xylene	0.064	Not Detected	0.28	Not Detected
o-Xylene	0.032	Not Detected	0.14	Not Detected
1,1,2,2-Tetrachloroethane	0.032	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	121	70-130
Toluene-d8	115	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Ambient Air

Lab ID#: 1004211-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040908sim**	**Date of Collection:**	**4/8/10 1:45:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**4/9/10 07:25 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.061	Not Detected
1,1-Dichloroethane	0.031	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Benzene	0.078	1.9	0.25	6.0
1,2-Dichloroethane	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Toluene	0.031	1.3	0.12	5.0
1,1,2-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	0.049	0.21	0.33
Ethyl Benzene	0.031	0.26	0.13	1.1
m,p-Xylene	0.062	0.86	0.27	3.8
o-Xylene	0.031	0.29	0.13	1.3
1,1,2,2-Tetrachloroethane	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 14

Lab ID#: 1004211-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040909sim**	**Date of Collection: 4/8/10 2:53:00 PM**	
Dil. Factor:	**1.55**	**Date of Analysis: 4/9/10 08:47 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.061	Not Detected
1,1-Dichloroethane	0.031	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Benzene	0.078	0.34	0.25	1.1
1,2-Dichloroethane	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Toluene	0.031	0.040	0.12	0.15
1,1,2-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	0.18	0.21	1.2
Ethyl Benzene	0.031	0.030 J	0.13	0.13 J
m,p-Xylene	0.062	0.12	0.27	0.54
o-Xylene	0.031	0.082	0.13	0.35
1,1,2,2-Tetrachloroethane	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 14 Lab Duplicate

Lab ID#: 1004211-04AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040910sim**	**Date of Collection: 4/8/10 2:53:00 PM**	
Dil. Factor:	**1.55**	**Date of Analysis: 4/9/10 09:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.061	Not Detected
1,1-Dichloroethane	0.031	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Benzene	0.078	0.33	0.25	1.0
1,2-Dichloroethane	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Toluene	0.031	0.040	0.12	0.15
1,1,2-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	0.18	0.21	1.2
Ethyl Benzene	0.031	Not Detected	0.13	Not Detected
m,p-Xylene	0.062	0.12	0.27	0.53
o-Xylene	0.031	0.080	0.13	0.35
1,1,2,2-Tetrachloroethane	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 4

Lab ID#: 1004211-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040911sim**	**Date of Collection:**	**4/8/10 3:12:00 PM**
Dil. Factor:	**1.55**	**Date of Analysis:**	**4/9/10 10:14 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.061	Not Detected
1,1-Dichloroethane	0.031	Not Detected	0.12	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Benzene	0.078	0.18	0.25	0.56
1,2-Dichloroethane	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Toluene	0.031	0.11	0.12	0.43
1,1,2-Trichloroethane	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	Not Detected	0.21	Not Detected
Ethyl Benzene	0.031	Not Detected	0.13	Not Detected
m,p-Xylene	0.062	Not Detected	0.27	Not Detected
o-Xylene	0.031	Not Detected	0.13	Not Detected
1,1,2,2-Tetrachloroethane	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	123	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 17

Lab ID#: 1004211-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040912sim**	**Date of Collection: 4/8/10 3:00:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 4/9/10 10:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.042	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.065	Not Detected
1,1-Dichloroethane	0.033	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.033	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.033	Not Detected	0.18	Not Detected
Benzene	0.082	0.10	0.26	0.32
1,2-Dichloroethane	0.033	Not Detected	0.13	Not Detected
Trichloroethene	0.033	Not Detected	0.18	Not Detected
Toluene	0.033	0.092	0.12	0.35
1,1,2-Trichloroethane	0.033	Not Detected	0.18	Not Detected
Tetrachloroethene	0.033	Not Detected	0.22	Not Detected
Ethyl Benzene	0.033	Not Detected	0.14	Not Detected
m,p-Xylene	0.066	Not Detected	0.28	Not Detected
o-Xylene	0.033	Not Detected	0.14	Not Detected
1,1,2,2-Tetrachloroethane	0.033	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.59	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 8

Lab ID#: 1004211-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040913sim**	**Date of Collection:**	**4/8/10 3:06:00 PM**
Dil. Factor:	**1.83**	**Date of Analysis:**	**4/10/10 12:16 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.047	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.072	Not Detected
1,1-Dichloroethane	0.037	Not Detected	0.15	Not Detected
cis-1,2-Dichloroethene	0.037	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Benzene	0.092	0.14	0.29	0.45
1,2-Dichloroethane	0.037	Not Detected	0.15	Not Detected
Trichloroethene	0.037	Not Detected	0.20	Not Detected
Toluene	0.037	0.066	0.14	0.25
1,1,2-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	Not Detected	0.25	Not Detected
Ethyl Benzene	0.037	Not Detected	0.16	Not Detected
m,p-Xylene	0.073	Not Detected	0.32	Not Detected
o-Xylene	0.037	Not Detected	0.16	Not Detected
1,1,2,2-Tetrachloroethane	0.037	Not Detected	0.25	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.66	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	120	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Building 10

Lab ID#: 1004211-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040914sim**	**Date of Collection: 4/8/10 3:17:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 4/10/10 01:06 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.063	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.12	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.17	Not Detected
Benzene	0.079	0.091	0.25	0.29
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Toluene	0.032	0.051	0.12	0.19
1,1,2-Trichloroethane	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	Not Detected	0.21	Not Detected
Ethyl Benzene	0.032	Not Detected	0.14	Not Detected
m,p-Xylene	0.063	0.11	0.27	0.47
o-Xylene	0.032	0.063	0.14	0.28
1,1,2,2-Tetrachloroethane	0.032	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	125	70-130
Toluene-d8	114	70-130
4-Bromofluorobenzene	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1004211-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040905sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/10 05:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1004211-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040902sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/10 01:24 PM**	

Compound	%Recovery
Vinyl Chloride	89
1,1-Dichloroethene	87
1,1-Dichloroethane	91
cis-1,2-Dichloroethene	90
1,1,1-Trichloroethane	96
Benzene	85
1,2-Dichloroethane	88
Trichloroethene	81
Toluene	84
1,1,2-Trichloroethane	83
Tetrachloroethene	77
Ethyl Benzene	91
m,p-Xylene	92
o-Xylene	97
1,1,2,2-Tetrachloroethane	92
trans-1,2-Dichloroethene	92
Methyl tert-butyl ether	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1004211-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**s040903sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/10 03:00 PM**	

Compound	%Recovery
Vinyl Chloride	102
1,1-Dichloroethene	91
1,1-Dichloroethane	103
cis-1,2-Dichloroethene	106
1,1,1-Trichloroethane	114
Benzene	100
1,2-Dichloroethane	102
Trichloroethene	95
Toluene	97
1,1,2-Trichloroethane	100
Tetrachloroethene	92
Ethyl Benzene	114
m,p-Xylene	120
o-Xylene	125
1,1,2,2-Tetrachloroethane	117
trans-1,2-Dichloroethene	106
Methyl tert-butyl ether	116

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	109	70-130

APPENDIX E

LABORATORY GROUNDWATER ANALYTICAL REPORTS

MAY, SEPTEMBER AND DECEMBER 2010

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

Report Summary

Tuesday June 08, 2010

Report Number: L461833
Samples Received: 05/29/10
Client Project: 190402025

Description: Brunswick Bayliner Marine

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-01

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-1

Collected By : Amy Zach
Collection Date : 05/26/10 10:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-01

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-1

Collected By : Amy Zach
Collection Date : 05/26/10 10:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	50.	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	92.9		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	103.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	96.4		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 06/08/10 16:19 Printed: 06/08/10 16:19

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-02

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-2

Collected By : Amy Zach
Collection Date : 05/26/10 10:27

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-02

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-2

Collected By : Amy Zach
Collection Date : 05/26/10 10:27

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	93.7		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	101.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	86.3		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-03

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-3

Collected By : Amy Zach
Collection Date : 05/26/10 07:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-03

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-3

Collected By : Amy Zach
Collection Date : 05/26/10 07:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	97.2		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	108.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	97.5		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-04

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-4

Collected By : Amy Zach
Collection Date : 05/26/10 09:56

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-04

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-4

Collected By : Amy Zach
Collection Date : 05/26/10 09:56

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	4.0	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	96.7		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	104.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	88.3		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-05

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Site ID :

Sample ID : MW-5

Project # : 190402025

Collected By : Amy Zach
Collection Date : 05/26/10 09:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-05

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Site ID :

Sample ID : MW-5

Project # : 190402025

Collected By : Amy Zach
Collection Date : 05/26/10 09:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	108.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	91.2		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-06

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Site ID :

Sample ID : MW-6

Project # : 190402025

Collected By : Amy Zach
Collection Date : 05/26/10 08:13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-06

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Site ID :

Sample ID : MW-6

Project # : 190402025

Collected By : Amy Zach
Collection Date : 05/26/10 08:13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	99.2		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	108.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	105.		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-07

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-7

Collected By : Amy Zach
Collection Date : 05/26/10 08:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-07

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-7

Collected By : Amy Zach
Collection Date : 05/26/10 08:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	93.0		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	101.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	87.7		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-08

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : DUP-1

Collected By : Amy Zach
Collection Date : 05/26/10 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-08

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : DUP-1

Collected By : Amy Zach
Collection Date : 05/26/10 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	46.	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	92.2		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	104.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	84.8		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 06/08/10 16:19 Printed: 06/08/10 16:20

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-09

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Site ID :

Sample ID : TRIP BLANK

Project # : 190402025

Collected By : Amy Zach
Collection Date : 05/26/10 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/07/10	1
Acrolein	BDL	50.	ug/l	8260B	06/07/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/07/10	1
Benzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/07/10	1
Bromoform	BDL	1.0	ug/l	8260B	06/07/10	1
Bromomethane	BDL	5.0	ug/l	8260B	06/07/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
Chloroethane	BDL	5.0	ug/l	8260B	06/07/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/07/10	1
Chloroform	BDL	5.0	ug/l	8260B	06/07/10	1
Chloromethane	BDL	2.5	ug/l	8260B	06/07/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/07/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/07/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	06/07/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

June 08,2010

ESC Sample # : L461833-09

Site ID :

Project # : 190402025

Date Received : May 29, 2010
Description : Brunswick Bayliner Marine

Sample ID : TRIP BLANK

Collected By : Amy Zach
Collection Date : 05/26/10 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/07/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/07/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/07/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/07/10	1
Naphthalene	BDL	5.0	ug/l	8260B	06/07/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Styrene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	06/07/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Toluene	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/07/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/07/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/07/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/07/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/07/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/07/10	1
Surrogate Recovery						
Toluene-d8	93.4		% Rec.	8260B	06/07/10	1
Dibromofluoromethane	103.		% Rec.	8260B	06/07/10	1
4-Bromofluorobenzene	84.3		% Rec.	8260B	06/07/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L461833-01	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-02	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-03	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-04	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-05	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-06	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-07	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-08	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3
L461833-09	WG482150	SAMP	Bromobenzene	R1247563	J3
	WG482150	SAMP	Bromomethane	R1247563	J4
	WG482150	SAMP	1,1,2,2-Tetrachloroethane	R1247563	J3
	WG482150	SAMP	1,2,3-Trichloropropane	R1247563	J3
	WG482150	SAMP	1,3,5-Trimethylbenzene	R1247563	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
06/08/10 at 16:20:10

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L461833-01 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-02 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-03 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-04 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-05 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-06 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-07 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-08 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

Sample: L461833-09 Account: SECORTOR Received: 05/29/10 09:00 Due Date: 06/07/10 00:00 RPT Date: 06/08/10 16:19

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Stantec Consulting - Tualatin, OR
Amy Zach
9400 SW Barnes Rd., Suite 200

Portland, OR 97225

Quality Assurance Report
Level II

June 08, 2010

L461833

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG482150	06/07/10 04:46
1,1,1-Trichloroethane	< .001	mg/l			WG482150	06/07/10 04:46
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG482150	06/07/10 04:46
1,1,2-Trichloroethane	< .001	mg/l			WG482150	06/07/10 04:46
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/l			WG482150	06/07/10 04:46
1,1-Dichloroethane	< .001	mg/l			WG482150	06/07/10 04:46
1,1-Dichloroethene	< .001	mg/l			WG482150	06/07/10 04:46
1,1-Dichloropropene	< .001	mg/l			WG482150	06/07/10 04:46
1,2,3-Trichlorobenzene	< .001	mg/l			WG482150	06/07/10 04:46
1,2,3-Trichloropropane	< .001	mg/l			WG482150	06/07/10 04:46
1,2,3-Trimethylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
1,2,4-Trichlorobenzene	< .001	mg/l			WG482150	06/07/10 04:46
1,2,4-Trimethylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG482150	06/07/10 04:46
1,2-Dibromoethane	< .001	mg/l			WG482150	06/07/10 04:46
1,2-Dichlorobenzene	< .001	mg/l			WG482150	06/07/10 04:46
1,2-Dichloroethane	< .001	mg/l			WG482150	06/07/10 04:46
1,2-Dichloropropane	< .001	mg/l			WG482150	06/07/10 04:46
1,3,5-Trimethylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
1,3-Dichlorobenzene	< .001	mg/l			WG482150	06/07/10 04:46
1,3-Dichloropropane	< .001	mg/l			WG482150	06/07/10 04:46
1,4-Dichlorobenzene	< .001	mg/l			WG482150	06/07/10 04:46
2,2-Dichloropropane	< .001	mg/l			WG482150	06/07/10 04:46
2-Butanone (MEK)	< .01	mg/l			WG482150	06/07/10 04:46
2-Chloroethyl vinyl ether	< .001	mg/l			WG482150	06/07/10 04:46
2-Chlorotoluene	< .001	mg/l			WG482150	06/07/10 04:46
4-Chlorotoluene	< .001	mg/l			WG482150	06/07/10 04:46
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG482150	06/07/10 04:46
Acetone	< .05	mg/l			WG482150	06/07/10 04:46
Acrolein	< .05	mg/l			WG482150	06/07/10 04:46
Acrylonitrile	< .01	mg/l			WG482150	06/07/10 04:46
Benzene	< .001	mg/l			WG482150	06/07/10 04:46
Bromobenzene	< .001	mg/l			WG482150	06/07/10 04:46
Bromodichloromethane	< .001	mg/l			WG482150	06/07/10 04:46
Bromoform	< .001	mg/l			WG482150	06/07/10 04:46
Bromomethane	< .005	mg/l			WG482150	06/07/10 04:46
Carbon tetrachloride	< .001	mg/l			WG482150	06/07/10 04:46
Chlorobenzene	< .001	mg/l			WG482150	06/07/10 04:46
Chlorodibromomethane	< .001	mg/l			WG482150	06/07/10 04:46
Chloroethane	< .001	mg/l			WG482150	06/07/10 04:46
Chloroform	< .005	mg/l			WG482150	06/07/10 04:46
Chloromethane	< .001	mg/l			WG482150	06/07/10 04:46
cis-1,2-Dichloroethene	< .001	mg/l			WG482150	06/07/10 04:46
cis-1,3-Dichloropropene	< .001	mg/l			WG482150	06/07/10 04:46
Di-isopropyl ether	< .001	mg/l			WG482150	06/07/10 04:46
Dibromomethane	< .001	mg/l			WG482150	06/07/10 04:46
Dichlorodifluoromethane	< .005	mg/l			WG482150	06/07/10 04:46
Ethylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
Hexachloro-1,3-Butadiene	< .001	mg/l			WG482150	06/07/10 04:46
Isopropylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
Methyl tert-butyl ether	< .001	mg/l			WG482150	06/07/10 04:46
Methylene Chloride	< .005	mg/l			WG482150	06/07/10 04:46
n-Butylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
n-Propylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
Naphthalene	< .005	mg/l			WG482150	06/07/10 04:46
p-Isopropyltoluene	< .001	mg/l			WG482150	06/07/10 04:46
sec-Butylbenzene	< .001	mg/l			WG482150	06/07/10 04:46
Styrene	< .001	mg/l			WG482150	06/07/10 04:46
tert-Butylbenzene	< .001	mg/l			WG482150	06/07/10 04:46

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Quality Assurance Report
Level II

L461833

June 08, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Tetrachloroethene	< .001	mg/l			WG482150	06/07/10 04:46
Toluene	< .005	mg/l			WG482150	06/07/10 04:46
trans-1,2-Dichloroethene	< .001	mg/l			WG482150	06/07/10 04:46
trans-1,3-Dichloropropene	< .001	mg/l			WG482150	06/07/10 04:46
Trichloroethene	< .001	mg/l			WG482150	06/07/10 04:46
Trichlorofluoromethane	< .005	mg/l			WG482150	06/07/10 04:46
Vinyl chloride	< .001	mg/l			WG482150	06/07/10 04:46
Xylenes, Total	< .003	mg/l			WG482150	06/07/10 04:46
4-Bromofluorobenzene		% Rec.	85.34	75-128	WG482150	06/07/10 04:46
Dibromofluoromethane		% Rec.	98.74	79-125	WG482150	06/07/10 04:46
Toluene-d8		% Rec.	93.08	87-114	WG482150	06/07/10 04:46

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0262	105.	75-134	WG482150
1,1,1-Trichloroethane	mg/l	.025	0.0253	101.	67-137	WG482150
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0228	91.4	72-128	WG482150
1,1,2-Trichloroethane	mg/l	.025	0.0222	88.8	79-123	WG482150
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	.025	0.0288	115.	51-149	WG482150
1,1-Dichloroethane	mg/l	.025	0.0252	101.	67-133	WG482150
1,1-Dichloroethene	mg/l	.025	0.0265	106.	60-130	WG482150
1,1-Dichloropropene	mg/l	.025	0.0269	108.	68-132	WG482150
1,2,3-Trichlorobenzene	mg/l	.025	0.0259	103.	63-138	WG482150
1,2,3-Trichloropropane	mg/l	.025	0.0216	86.6	68-130	WG482150
1,2,3-Trimethylbenzene	mg/l	.025	0.0231	92.4	70-127	WG482150
1,2,4-Trichlorobenzene	mg/l	.025	0.0299	119.	65-137	WG482150
1,2,4-Trimethylbenzene	mg/l	.025	0.0228	91.4	72-135	WG482150
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0236	94.2	55-134	WG482150
1,2-Dibromoethane	mg/l	.025	0.0240	95.9	75-126	WG482150
1,2-Dichlorobenzene	mg/l	.025	0.0251	100.	75-122	WG482150
1,2-Dichloroethane	mg/l	.025	0.0268	107.	63-137	WG482150
1,2-Dichloropropane	mg/l	.025	0.0234	93.5	74-122	WG482150
1,3,5-Trimethylbenzene	mg/l	.025	0.0242	96.7	73-134	WG482150
1,3-Dichlorobenzene	mg/l	.025	0.0231	92.3	73-131	WG482150
1,3-Dichloropropane	mg/l	.025	0.0249	99.6	77-119	WG482150
1,4-Dichlorobenzene	mg/l	.025	0.0240	96.1	70-121	WG482150
2,2-Dichloropropane	mg/l	.025	0.0273	109.	46-151	WG482150
2-Butanone (MEK)	mg/l	.125	0.126	101.	53-132	WG482150
2-Chloroethyl vinyl ether	mg/l	.125	0.119	95.3	0-171	WG482150
2-Chlorotoluene	mg/l	.025	0.0219	87.8	74-128	WG482150
4-Chlorotoluene	mg/l	.025	0.0232	92.6	74-130	WG482150
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.130	104.	60-142	WG482150
Acetone	mg/l	.125	0.132	106.	48-134	WG482150
Acrolein	mg/l	.125	0.0280	22.4	6-182	WG482150
Acrylonitrile	mg/l	.125	0.136	109.	60-140	WG482150
Benzene	mg/l	.025	0.0265	106.	67-126	WG482150
Bromobenzene	mg/l	.025	0.0235	94.2	76-123	WG482150
Bromodichloromethane	mg/l	.025	0.0234	93.7	68-133	WG482150
Bromoform	mg/l	.025	0.0220	88.1	60-139	WG482150
Bromomethane	mg/l	.025	0.0460	184.*	45-175	WG482150
Carbon tetrachloride	mg/l	.025	0.0281	112.	64-141	WG482150
Chlorobenzene	mg/l	.025	0.0241	96.3	77-125	WG482150
Chlorodibromomethane	mg/l	.025	0.0245	98.2	73-138	WG482150
Chloroethane	mg/l	.025	0.0321	128.	49-155	WG482150
Chloroform	mg/l	.025	0.0253	101.	66-126	WG482150
Chloromethane	mg/l	.025	0.0161	64.3	45-152	WG482150
cis-1,2-Dichloroethene	mg/l	.025	0.0242	97.0	72-128	WG482150
cis-1,3-Dichloropropene	mg/l	.025	0.0208	83.2	73-131	WG482150

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Quality Assurance Report
Level II

June 08, 2010

L461833

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Di-isopropyl ether	mg/l	.025	0.0262	105.	63-139	WG482150
Dibromomethane	mg/l	.025	0.0226	90.2	73-125	WG482150
Dichlorodifluoromethane	mg/l	.025	0.0173	69.2	39-189	WG482150
Ethylbenzene	mg/l	.025	0.0246	98.4	76-129	WG482150
Hexachloro-1,3-Butadiene	mg/l	.025	0.0266	107.	67-135	WG482150
Isopropylbenzene	mg/l	.025	0.0251	100.	73-132	WG482150
Methyl tert-butyl ether	mg/l	.025	0.0267	107.	51-142	WG482150
Methylene Chloride	mg/l	.025	0.0255	102.	64-125	WG482150
n-Butylbenzene	mg/l	.025	0.0276	110.	63-142	WG482150
n-Propylbenzene	mg/l	.025	0.0232	93.0	71-132	WG482150
Naphthalene	mg/l	.025	0.0262	105.	56-145	WG482150
p-Isopropyltoluene	mg/l	.025	0.0254	101.	68-138	WG482150
sec-Butylbenzene	mg/l	.025	0.0241	96.5	70-135	WG482150
Styrene	mg/l	.025	0.0205	82.1	78-130	WG482150
tert-Butylbenzene	mg/l	.025	0.0243	97.1	72-134	WG482150
Tetrachloroethene	mg/l	.025	0.0225	90.2	67-135	WG482150
Toluene	mg/l	.025	0.0231	92.4	72-122	WG482150
trans-1,2-Dichloroethene	mg/l	.025	0.0245	98.2	67-129	WG482150
trans-1,3-Dichloropropene	mg/l	.025	0.0202	80.7	66-137	WG482150
Trichloroethene	mg/l	.025	0.0232	92.9	74-126	WG482150
Trichlorofluoromethane	mg/l	.025	0.0276	111.	54-156	WG482150
Vinyl chloride	mg/l	.025	0.0218	87.1	55-153	WG482150
Xylenes, Total	mg/l	.075	0.0738	98.5	75-128	WG482150
4-Bromofluorobenzene				90.96	75-128	WG482150
Dibromofluoromethane				100.3	79-125	WG482150
Toluene-d8				92.27	87-114	WG482150

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0261	0.0262	104.	75-134	0.360	20	WG482150
1,1,1-Trichloroethane	mg/l	0.0266	0.0253	106.	67-137	5.09	20	WG482150
1,1,2,2-Tetrachloroethane	mg/l	0.0284	0.0228	114.	72-128	21.7*	20	WG482150
1,1,2-Trichloroethane	mg/l	0.0240	0.0222	96.0	79-123	7.55	20	WG482150
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0307	0.0288	123.	51-149	6.49	20	WG482150
1,1-Dichloroethane	mg/l	0.0260	0.0252	104.	67-133	3.08	20	WG482150
1,1-Dichloroethene	mg/l	0.0256	0.0265	102.	60-130	3.24	20	WG482150
1,1-Dichloropropene	mg/l	0.0265	0.0269	106.	68-132	1.72	20	WG482150
1,2,3-Trichlorobenzene	mg/l	0.0254	0.0259	101.	63-138	2.03	20	WG482150
1,2,3-Trichloropropane	mg/l	0.0273	0.0216	109.	68-130	23.3*	20	WG482150
1,2,3-Trimethylbenzene	mg/l	0.0237	0.0231	95.0	70-127	2.71	20	WG482150
1,2,4-Trichlorobenzene	mg/l	0.0280	0.0299	112.	65-137	6.50	20	WG482150
1,2,4-Trimethylbenzene	mg/l	0.0265	0.0228	106.	72-135	15.0	20	WG482150
1,2-Dibromo-3-Chloropropane	mg/l	0.0209	0.0236	84.0	55-134	12.0	20	WG482150
1,2-Dibromoethane	mg/l	0.0251	0.0240	100.	75-126	4.74	20	WG482150
1,2-Dichlorobenzene	mg/l	0.0244	0.0251	98.0	75-122	2.73	20	WG482150
1,2-Dichloroethane	mg/l	0.0268	0.0268	107.	63-137	0.230	20	WG482150
1,2-Dichloropropane	mg/l	0.0238	0.0234	95.0	74-122	1.73	20	WG482150
1,3,5-Trimethylbenzene	mg/l	0.0303	0.0242	121.	73-134	22.5*	20	WG482150
1,3-Dichlorobenzene	mg/l	0.0269	0.0231	108.	73-131	15.4	20	WG482150
1,3-Dichloropropane	mg/l	0.0262	0.0249	105.	77-119	5.03	20	WG482150
1,4-Dichlorobenzene	mg/l	0.0242	0.0240	97.0	70-121	0.590	20	WG482150
2,2-Dichloropropane	mg/l	0.0275	0.0273	110.	46-151	0.580	20	WG482150
2-Butanone (MEK)	mg/l	0.136	0.126	108.	53-132	7.45	20	WG482150
2-Chloroethyl vinyl ether	mg/l	0.130	0.119	104.	0-171	9.05	27	WG482150
2-Chlorotoluene	mg/l	0.0262	0.0219	105.	74-128	17.6	20	WG482150
4-Chlorotoluene	mg/l	0.0268	0.0232	107.	74-130	14.7	20	WG482150
4-Methyl-2-pentanone (MIBK)	mg/l	0.130	0.130	104.	60-142	0.140	20	WG482150
Acetone	mg/l	0.137	0.132	109.	48-134	3.20	20	WG482150

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Quality Assurance Report
Level II

June 08, 2010

L461833

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Acrolein	mg/l	0.0248	0.0280	20.0	6-182	12.1	39	WG482150
Acrylonitrile	mg/l	0.142	0.136	114.	60-140	4.40	20	WG482150
Benzene	mg/l	0.0269	0.0265	107.	67-126	1.44	20	WG482150
Bromobenzene	mg/l	0.0296	0.0235	118.	76-123	22.9*	20	WG482150
Bromodichloromethane	mg/l	0.0249	0.0234	100.	68-133	6.24	20	WG482150
Bromoform	mg/l	0.0265	0.0220	106.	60-139	18.5	20	WG482150
Bromomethane	mg/l	0.0429	0.0460	172.	45-175	6.85	20	WG482150
Carbon tetrachloride	mg/l	0.0273	0.0281	109.	64-141	2.78	20	WG482150
Chlorobenzene	mg/l	0.0262	0.0241	105.	77-125	8.55	20	WG482150
Chlorodibromomethane	mg/l	0.0253	0.0245	101.	73-138	3.14	20	WG482150
Chloroethane	mg/l	0.0340	0.0321	136.	49-155	5.69	20	WG482150
Chloroform	mg/l	0.0257	0.0253	103.	66-126	1.34	20	WG482150
Chloromethane	mg/l	0.0163	0.0161	65.0	45-152	1.60	20	WG482150
cis-1,2-Dichloroethene	mg/l	0.0242	0.0242	97.0	72-128	0.230	20	WG482150
cis-1,3-Dichloropropene	mg/l	0.0220	0.0208	88.0	73-131	5.47	20	WG482150
Di-isopropyl ether	mg/l	0.0264	0.0262	105.	63-139	0.660	20	WG482150
Dibromomethane	mg/l	0.0232	0.0226	93.0	73-125	2.68	20	WG482150
Dichlorodifluoromethane	mg/l	0.0188	0.0173	75.0	39-189	8.23	24	WG482150
Ethylbenzene	mg/l	0.0255	0.0246	102.	76-129	3.53	20	WG482150
Hexachloro-1,3-Butadiene	mg/l	0.0257	0.0266	103.	67-135	3.53	20	WG482150
Isopropylbenzene	mg/l	0.0305	0.0251	122.	73-132	19.6	20	WG482150
Methyl tert-butyl ether	mg/l	0.0274	0.0267	110.	51-142	2.69	20	WG482150
Methylene Chloride	mg/l	0.0263	0.0255	105.	64-125	3.10	20	WG482150
n-Butylbenzene	mg/l	0.0269	0.0276	108.	63-142	2.67	20	WG482150
n-Propylbenzene	mg/l	0.0269	0.0232	107.	71-132	14.5	20	WG482150
Naphthalene	mg/l	0.0254	0.0262	102.	56-145	3.08	20	WG482150
p-Isopropyltoluene	mg/l	0.0294	0.0254	117.	68-138	14.6	20	WG482150
sec-Butylbenzene	mg/l	0.0289	0.0241	116.	70-135	18.1	20	WG482150
Styrene	mg/l	0.0241	0.0205	96.0	78-130	16.0	20	WG482150
tert-Butylbenzene	mg/l	0.0297	0.0243	119.	72-134	19.9	20	WG482150
Tetrachloroethene	mg/l	0.0233	0.0225	93.0	67-135	3.50	20	WG482150
Toluene	mg/l	0.0226	0.0231	90.0	72-122	2.35	20	WG482150
trans-1,2-Dichloroethene	mg/l	0.0260	0.0245	104.	67-129	5.80	20	WG482150
trans-1,3-Dichloropropene	mg/l	0.0192	0.0202	77.0	66-137	5.20	20	WG482150
Trichloroethene	mg/l	0.0242	0.0232	97.0	74-126	4.19	20	WG482150
Trichlorofluoromethane	mg/l	0.0286	0.0276	114.	54-156	3.40	20	WG482150
Vinyl chloride	mg/l	0.0220	0.0218	88.0	55-153	1.28	20	WG482150
Xylenes, Total	mg/l	0.0805	0.0738	107.	75-128	8.57	20	WG482150
4-Bromofluorobenzene				113.7	75-128			WG482150
Dibromofluoromethane				99.09	79-125			WG482150
Toluene-d8				92.44	87-114			WG482150

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0256	0	.025	102.	45-152	L461718-04	WG482150
1,1,1-Trichloroethane	mg/l	0.0312	0	.025	125.	31-161	L461718-04	WG482150
1,1,2,2-Tetrachloroethane	mg/l	0.0243	0	.025	97.1	49-149	L461718-04	WG482150
1,1,2-Trichloroethane	mg/l	0.0235	0	.025	93.9	46-145	L461718-04	WG482150
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0335	0	.025	134.	14-168	L461718-04	WG482150
1,1-Dichloroethane	mg/l	0.0269	0	.025	108.	30-159	L461718-04	WG482150
1,1-Dichloroethene	mg/l	0.0326	0	.025	130.	10-162	L461718-04	WG482150
1,1-Dichloropropene	mg/l	0.0287	0	.025	115.	14-162	L461718-04	WG482150
1,2,3-Trichlorobenzene	mg/l	0.0259	0	.025	103.	32-143	L461718-04	WG482150
1,2,3-Trichloropropane	mg/l	0.0254	0	.025	102.	48-148	L461718-04	WG482150
1,2,3-Trimethylbenzene	mg/l	0.0258	0	.025	103.	36-141	L461718-04	WG482150
1,2,4-Trichlorobenzene	mg/l	0.0259	0	.025	104.	27-142	L461718-04	WG482150
1,2,4-Trimethylbenzene	mg/l	0.0278	0	.025	111.	29-153	L461718-04	WG482150
1,2-Dibromo-3-Chloropropane	mg/l	0.0220	0	.025	88.1	37-148	L461718-04	WG482150

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Amy Zach
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

Quality Assurance Report
Level II

June 08, 2010

L461833

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2-Dibromoethane	mg/l	0.0239	0	.025	95.6	41-149	L461718-04	WG482150
1,2-Dichlorobenzene	mg/l	0.0249	0	.025	99.6	40-139	L461718-04	WG482150
1,2-Dichloroethane	mg/l	0.0267	0	.025	107.	29-167	L461718-04	WG482150
1,2-Dichloropropane	mg/l	0.0232	0	.025	92.8	39-148	L461718-04	WG482150
1,3,5-Trimethylbenzene	mg/l	0.0273	0	.025	109.	33-149	L461718-04	WG482150
1,3-Dichlorobenzene	mg/l	0.0254	0	.025	101.	32-148	L461718-04	WG482150
1,3-Dichloropropane	mg/l	0.0235	0	.025	94.2	44-142	L461718-04	WG482150
1,4-Dichlorobenzene	mg/l	0.0246	0	.025	98.6	32-136	L461718-04	WG482150
2,2-Dichloropropane	mg/l	0.0363	0	.025	145.	14-158	L461718-04	WG482150
2-Butanone (MEK)	mg/l	0.114	0	.125	90.9	32-151	L461718-04	WG482150
2-Chloroethyl vinyl ether	mg/l	0.0556	0	.125	44.5	0-175	L461718-04	WG482150
2-Chlorotoluene	mg/l	0.0264	0	.025	106.	35-147	L461718-04	WG482150
4-Chlorotoluene	mg/l	0.0266	0	.025	106.	33-147	L461718-04	WG482150
4-Methyl-2-pentanone (MIBK)	mg/l	0.114	0	.125	91.6	40-160	L461718-04	WG482150
Acetone	mg/l	0.158	0.0263	.125	106.	25-157	L461718-04	WG482150
Acrolein	mg/l	0.0957	0	.125	76.6	0-179	L461718-04	WG482150
Acrylonitrile	mg/l	0.123	0	.125	98.5	37-162	L461718-04	WG482150
Benzene	mg/l	0.0270	0	.025	108.	16-158	L461718-04	WG482150
Bromobenzene	mg/l	0.0251	0	.025	100.	37-147	L461718-04	WG482150
Bromodichloromethane	mg/l	0.0260	0	.025	104.	45-147	L461718-04	WG482150
Bromoform	mg/l	0.0251	0	.025	100.	38-152	L461718-04	WG482150
Bromomethane	mg/l	0.0325	0	.025	130.	0-191	L461718-04	WG482150
Carbon tetrachloride	mg/l	0.0323	0	.025	129.	22-168	L461718-04	WG482150
Chlorobenzene	mg/l	0.0233	0	.025	93.2	33-148	L461718-04	WG482150
Chlorodibromomethane	mg/l	0.0259	0	.025	103.	48-151	L461718-04	WG482150
Chloroethane	mg/l	0.0313	0	.025	125.	4-176	L461718-04	WG482150
Chloroform	mg/l	0.0257	0	.025	103.	37-147	L461718-04	WG482150
Chloromethane	mg/l	0.0257	0	.025	103.	10-174	L461718-04	WG482150
cis-1,2-Dichloroethene	mg/l	0.0260	0	.025	104.	29-156	L461718-04	WG482150
cis-1,3-Dichloropropene	mg/l	0.0234	0	.025	93.5	35-148	L461718-04	WG482150
Di-isopropyl ether	mg/l	0.0255	0	.025	102.	39-160	L461718-04	WG482150
Dibromomethane	mg/l	0.0242	0	.025	96.6	36-152	L461718-04	WG482150
Dichlorodifluoromethane	mg/l	0.0318	0	.025	127.	0-200	L461718-04	WG482150
Ethylbenzene	mg/l	0.0253	0	.025	101.	29-150	L461718-04	WG482150
Hexachloro-1,3-Butadiene	mg/l	0.0303	0	.025	121.	28-144	L461718-04	WG482150
Isopropylbenzene	mg/l	0.0278	0	.025	111.	35-147	L461718-04	WG482150
Methyl tert-butyl ether	mg/l	0.0255	0	.025	102.	24-167	L461718-04	WG482150
Methylene Chloride	mg/l	0.0269	0	.025	108.	23-151	L461718-04	WG482150
n-Butylbenzene	mg/l	0.0306	0	.025	122.	22-151	L461718-04	WG482150
n-Propylbenzene	mg/l	0.0286	0	.025	114.	26-150	L461718-04	WG482150
Naphthalene	mg/l	0.0256	0	.025	102.	24-160	L461718-04	WG482150
p-Isopropyltoluene	mg/l	0.0287	0	.025	115.	28-151	L461718-04	WG482150
sec-Butylbenzene	mg/l	0.0287	0	.025	115.	32-149	L461718-04	WG482150
Styrene	mg/l	0.0259	0	.025	104.	38-149	L461718-04	WG482150
tert-Butylbenzene	mg/l	0.0280	0	.025	112.	36-149	L461718-04	WG482150
Tetrachloroethene	mg/l	0.0244	0	.025	97.6	13-157	L461718-04	WG482150
Toluene	mg/l	0.0251	0	.025	100.	22-152	L461718-04	WG482150
trans-1,2-Dichloroethene	mg/l	0.0273	0	.025	109.	11-160	L461718-04	WG482150
trans-1,3-Dichloropropene	mg/l	0.0258	0	.025	103.	33-153	L461718-04	WG482150
Trichloroethene	mg/l	0.0254	0	.025	102.	18-163	L461718-04	WG482150
Trichlorofluoromethane	mg/l	0.0398	0	.025	159.	10-177	L461718-04	WG482150
Vinyl chloride	mg/l	0.0287	0	.025	115.	0-179	L461718-04	WG482150
Xylenes, Total	mg/l	0.0791	0	.075	105.	27-151	L461718-04	WG482150

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0253	0.0256	101.	45-152	1.24	21	L461718-04	WG482150
1,1,1-Trichloroethane	mg/l	0.0304	0.0312	122.	31-161	2.58	23	L461718-04	WG482150

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Level II

June 08, 2010

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Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,2,2-Tetrachloroethane	mg/l	0.0235	0.0243	93.9	49-149	3.36	22	L461718-04	WG482150
1,1,2-Trichloroethane	mg/l	0.0236	0.0235	94.5	46-145	0.600	20	L461718-04	WG482150
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0331	0.0335	132.	14-168	1.26	24	L461718-04	WG482150
1,1-Dichloroethane	mg/l	0.0274	0.0269	110.	30-159	2.06	21	L461718-04	WG482150
1,1-Dichloroethene	mg/l	0.0321	0.0326	128.	10-162	1.50	23	L461718-04	WG482150
1,1-Dichloropropene	mg/l	0.0288	0.0287	115.	14-162	0.160	23	L461718-04	WG482150
1,2,3-Trichlorobenzene	mg/l	0.0253	0.0259	101.	32-143	2.11	33	L461718-04	WG482150
1,2,3-Trichloropropane	mg/l	0.0241	0.0254	96.3	48-148	5.39	23	L461718-04	WG482150
1,2,3-Trimethylbenzene	mg/l	0.0262	0.0258	105.	36-141	1.64	25	L461718-04	WG482150
1,2,4-Trichlorobenzene	mg/l	0.0256	0.0259	102.	27-142	1.27	30	L461718-04	WG482150
1,2,4-Trimethylbenzene	mg/l	0.0291	0.0278	116.	29-153	4.33	27	L461718-04	WG482150
1,2-Dibromo-3-Chloropropane	mg/l	0.0222	0.0220	88.8	37-148	0.790	27	L461718-04	WG482150
1,2-Dibromoethane	mg/l	0.0236	0.0239	94.3	41-149	1.35	21	L461718-04	WG482150
1,2-Dichlorobenzene	mg/l	0.0247	0.0249	98.9	40-139	0.740	23	L461718-04	WG482150
1,2-Dichloroethane	mg/l	0.0259	0.0267	104.	29-167	3.15	21	L461718-04	WG482150
1,2-Dichloropropane	mg/l	0.0241	0.0232	96.3	39-148	3.75	20	L461718-04	WG482150
1,3,5-Trimethylbenzene	mg/l	0.0275	0.0273	110.	33-149	0.720	26	L461718-04	WG482150
1,3-Dichlorobenzene	mg/l	0.0244	0.0254	97.7	32-148	3.75	24	L461718-04	WG482150
1,3-Dichloropropane	mg/l	0.0230	0.0235	91.9	44-142	2.45	20	L461718-04	WG482150
1,4-Dichlorobenzene	mg/l	0.0246	0.0246	98.2	32-136	0.380	23	L461718-04	WG482150
2,2-Dichloropropane	mg/l	0.0311	0.0363	124.	14-158	15.5	23	L461718-04	WG482150
2-Butanone (MEK)	mg/l	0.104	0.114	83.0	32-151	9.02	26	L461718-04	WG482150
2-Chloroethyl vinyl ether	mg/l	0.0138	0.0556	11.0	0-175	121.*	75	L461718-04	WG482150
2-Chlorotoluene	mg/l	0.0258	0.0264	103.	35-147	2.33	24	L461718-04	WG482150
4-Chlorotoluene	mg/l	0.0253	0.0266	101.	33-147	4.91	25	L461718-04	WG482150
4-Methyl-2-pentanone (MIBK)	mg/l	0.113	0.114	90.3	40-160	1.42	28	L461718-04	WG482150
Acetone	mg/l	0.144	0.158	93.9	25-157	9.69	26	L461718-04	WG482150
Acrolein	mg/l	0.100	0.0957	80.4	0-179	4.79	39	L461718-04	WG482150
Acrylonitrile	mg/l	0.116	0.123	92.5	37-162	6.31	24	L461718-04	WG482150
Benzene	mg/l	0.0260	0.0270	104.	16-158	3.82	21	L461718-04	WG482150
Bromobenzene	mg/l	0.0250	0.0251	100.	37-147	0.200	23	L461718-04	WG482150
Bromodichloromethane	mg/l	0.0264	0.0260	106.	45-147	1.59	20	L461718-04	WG482150
Bromoform	mg/l	0.0241	0.0251	96.3	38-152	4.16	20	L461718-04	WG482150
Bromomethane	mg/l	0.0327	0.0325	131.	0-191	0.800	35	L461718-04	WG482150
Carbon tetrachloride	mg/l	0.0318	0.0323	127.	22-168	1.36	24	L461718-04	WG482150
Chlorobenzene	mg/l	0.0246	0.0233	98.5	33-148	5.48	22	L461718-04	WG482150
Chlorodibromomethane	mg/l	0.0255	0.0259	102.	48-151	1.41	21	L461718-04	WG482150
Chloroethane	mg/l	0.0319	0.0313	128.	4-176	1.97	27	L461718-04	WG482150
Chloroform	mg/l	0.0256	0.0257	102.	37-147	0.520	21	L461718-04	WG482150
Chloromethane	mg/l	0.0272	0.0257	109.	10-174	5.47	28	L461718-04	WG482150
cis-1,2-Dichloroethene	mg/l	0.0258	0.0260	103.	29-156	0.890	22	L461718-04	WG482150
cis-1,3-Dichloropropene	mg/l	0.0263	0.0234	105.	35-148	11.6	21	L461718-04	WG482150
Di-isopropyl ether	mg/l	0.0255	0.0255	102.	39-160	0.230	21	L461718-04	WG482150
Dibromomethane	mg/l	0.0244	0.0242	97.5	36-152	0.870	20	L461718-04	WG482150
Dichlorodifluoromethane	mg/l	0.0339	0.0318	136.	0-200	6.63	26	L461718-04	WG482150
Ethylbenzene	mg/l	0.0273	0.0253	109.	29-150	7.51	24	L461718-04	WG482150
Hexachloro-1,3-Butadiene	mg/l	0.0293	0.0303	117.	28-144	3.66	33	L461718-04	WG482150
Isopropylbenzene	mg/l	0.0273	0.0278	109.	35-147	1.67	25	L461718-04	WG482150
Methyl tert-butyl ether	mg/l	0.0249	0.0255	99.6	24-167	2.46	22	L461718-04	WG482150
Methylene Chloride	mg/l	0.0266	0.0269	106.	23-151	1.15	21	L461718-04	WG482150
n-Butylbenzene	mg/l	0.0294	0.0306	118.	22-151	4.02	29	L461718-04	WG482150
n-Propylbenzene	mg/l	0.0277	0.0286	111.	26-150	3.27	25	L461718-04	WG482150
Naphthalene	mg/l	0.0246	0.0256	98.4	24-160	3.97	37	L461718-04	WG482150
p-Isopropyltoluene	mg/l	0.0281	0.0287	112.	28-151	2.16	27	L461718-04	WG482150
sec-Butylbenzene	mg/l	0.0276	0.0287	110.	32-149	3.72	26	L461718-04	WG482150
Styrene	mg/l	0.0253	0.0259	101.	38-149	2.37	23	L461718-04	WG482150
tert-Butylbenzene	mg/l	0.0275	0.0280	110.	36-149	1.92	26	L461718-04	WG482150
Tetrachloroethene	mg/l	0.0261	0.0244	104.	13-157	6.91	24	L461718-04	WG482150
Toluene	mg/l	0.0302	0.0251	121.	22-152	18.3	22	L461718-04	WG482150

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Quality Assurance Report
Level II

L461833

June 08, 2010

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
trans-1,2-Dichloroethene	mg/l	0.0276	0.0273	110.	11-160	1.09	23	L461718-04	WG482150
trans-1,3-Dichloropropene	mg/l	0.0260	0.0258	104.	33-153	0.770	22	L461718-04	WG482150
Trichloroethene	mg/l	0.0260	0.0254	104.	18-163	2.07	21	L461718-04	WG482150
Trichlorofluoromethane	mg/l	0.0378	0.0398	151.	10-177	5.31	24	L461718-04	WG482150
Vinyl chloride	mg/l	0.0296	0.0287	118.	0-179	2.99	26	L461718-04	WG482150
Xylenes, Total	mg/l	0.0823	0.0791	110.	27-151	3.97	23	L461718-04	WG482150

Batch number /Run number / Sample number cross reference

WG482150: R1247563: L461833-01 02 03 04 05 06 07 08 09

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
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Level II

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Accounts Payable
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Analysis/Container/Preservative

B199

Chain of Custody Page 1 of 1

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Report to: Amy Zach
Email: ross.simmons@stantec.com amy.zach@stantec.com, ~~paula~~

Project Description: Brunswick Bayliner Marine
City/State Collected: Arlington, WA

Phone: (503) 297-2030
FAX: (503) 297-5429
Client Project #: 190402025
Lab Project #: SECORTOR-BRUNSWICK
Collected by (print): Amy C. Zach
Site/Facility ID#:
P.O.#:
Collected by (signature): Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day.....100%
___ Two Day.....50%
___ Three Day.....25%

Date Results Needed: Std TAT
Email? ___No X Yes
FAX? ___No ___Yes

Acctnum: SECORTOR (lab use only)
Template/Prelogin: T64847/ P320292
Cooler #: 5-19 KW
Shipped Via: FedEX Saver

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260 40mlAmb-HCl	V8260- Trip Blank 40mlAmb-HCl-Blk						Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW	--	05-26-10	1055	3	X								L1161833-01
MW-2	Grab	GW	--	05-26-10	1027	3	X								-02
MW-3	Grab	GW	--	05-26-10	0740	3	X								-03
MW-4	Grab	GW	--	05-26-10	0956	3	X								-04
MW-5	Grab	GW	--	05-26-10	0920	3	X								-05
MW-6	Grab	GW	--	05-26-10	0813	3	X								-06
MW-7	Grab	GW	--	05-26-10	0850	3	X								-07
DUP-1	Grab	GW	--	05-26-10	DUP-1	3	X								-08
TB-1	Grab	GW	--	--	--	1	X	X							-09

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

8719 5656 6951

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	05-28-10	1445	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)
			J. Ell

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ ____
Temp: 2.8°C Bottles Received: 25V
Date: 05-28-10 Time: 0900

Condition: OK (lab use only)
COC Seal Intact: ___ Y ___ N ___ NA
pH Checked: NCF:

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Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

Report Summary

Thursday September 16, 2010

Report Number: L478606
Samples Received: 09/14/10
Client Project: 190402025

Description: Brunswick Bayliner Marine

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-01

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-1

Collected By : Janet Nash
Collection Date : 09/09/10 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-01

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-1

Collected By : Janet Nash
Collection Date : 09/09/10 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	57.	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	103.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	110.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 09/16/10 10:33 Printed: 09/16/10 10:33

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-02

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-2

Collected By : Janet Nash
Collection Date : 09/09/10 11:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-02

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-2

Collected By : Janet Nash
Collection Date : 09/09/10 11:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	101.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	107.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 09/16/10 10:33 Printed: 09/16/10 10:34

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-03

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-3

Collected By : Janet Nash
Collection Date : 09/09/10 09:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-03

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-3

Collected By : Janet Nash
Collection Date : 09/09/10 09:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	106.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	105.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 09/16/10 10:33 Printed: 09/16/10 10:34

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-04

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-4

Collected By : Janet Nash
Collection Date : 09/09/10 11:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-04

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-4

Collected By : Janet Nash
Collection Date : 09/09/10 11:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	5.2	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	108.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	103.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-05

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Site ID :

Sample ID : MW-5

Project # : 190402025

Collected By : Janet Nash
Collection Date : 09/09/10 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-05

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-5

Collected By : Janet Nash
Collection Date : 09/09/10 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	105.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	104.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-06

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-6

Collected By : Janet Nash
Collection Date : 09/09/10 09:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-06

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-6

Collected By : Janet Nash
Collection Date : 09/09/10 09:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	106.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	108.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 09/16/10 10:33 Printed: 09/16/10 10:34

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-07

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-7

Collected By : Janet Nash
Collection Date : 09/09/10 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-07

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : MW-7

Collected By : Janet Nash
Collection Date : 09/09/10 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	105.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	103.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 09/16/10 10:33 Printed: 09/16/10 10:34

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-08

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : DUP-1

Collected By : Janet Nash
Collection Date : 09/09/10 12:02

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-08

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : DUP-1

Collected By : Janet Nash
Collection Date : 09/09/10 12:02

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	54.	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	106.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	111.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 09/16/10 10:33 Printed: 09/16/10 10:34

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-09

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Site ID :

Sample ID : TRIP BLANK

Project # : 190402025

Collected By : Janet Nash
Collection Date : 09/09/10 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	09/15/10	1
Acrolein	BDL	50.	ug/l	8260B	09/15/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	09/15/10	1
Benzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	09/15/10	1
Bromoform	BDL	1.0	ug/l	8260B	09/15/10	1
Bromomethane	BDL	5.0	ug/l	8260B	09/15/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
Chloroethane	BDL	5.0	ug/l	8260B	09/15/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	09/15/10	1
Chloroform	BDL	5.0	ug/l	8260B	09/15/10	1
Chloromethane	BDL	2.5	ug/l	8260B	09/15/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	09/15/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	09/15/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	09/15/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

September 16,2010

ESC Sample # : L478606-09

Site ID :

Project # : 190402025

Date Received : September 14, 2010
Description : Brunswick Bayliner Marine

Sample ID : TRIP BLANK

Collected By : Janet Nash
Collection Date : 09/09/10 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	09/15/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	09/15/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	09/15/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	09/15/10	1
Naphthalene	BDL	5.0	ug/l	8260B	09/15/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Styrene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	09/15/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Toluene	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	09/15/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	09/15/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	09/15/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	09/15/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	09/15/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	09/15/10	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/15/10	1
Dibromofluoromethane	103.		% Rec.	8260B	09/15/10	1
4-Bromofluorobenzene	108.		% Rec.	8260B	09/15/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 09/16/10 10:33 Printed: 09/16/10 10:34

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L478606-01	WG498314	SAMP	2-Chloroethyl vinyl ether	R1376890	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/16/10 at 10:34:13

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L478606-01 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-02 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-03 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-04 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-05 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-06 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-07 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-08 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

Sample: L478606-09 Account: SECORTOR Received: 09/14/10 09:00 Due Date: 09/21/10 00:00 RPT Date: 09/16/10 10:33

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Quality Assurance Report
Level II

L478606

September 16, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG498314	09/14/10 23:21
1,1,1-Trichloroethane	< .001	mg/l			WG498314	09/14/10 23:21
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG498314	09/14/10 23:21
1,1,2-Trichloroethane	< .001	mg/l			WG498314	09/14/10 23:21
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/l			WG498314	09/14/10 23:21
1,1-Dichloroethane	< .001	mg/l			WG498314	09/14/10 23:21
1,1-Dichloroethene	< .001	mg/l			WG498314	09/14/10 23:21
1,1-Dichloropropene	< .001	mg/l			WG498314	09/14/10 23:21
1,2,3-Trichlorobenzene	< .001	mg/l			WG498314	09/14/10 23:21
1,2,3-Trichloropropane	< .001	mg/l			WG498314	09/14/10 23:21
1,2,3-Trimethylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
1,2,4-Trichlorobenzene	< .001	mg/l			WG498314	09/14/10 23:21
1,2,4-Trimethylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG498314	09/14/10 23:21
1,2-Dibromoethane	< .001	mg/l			WG498314	09/14/10 23:21
1,2-Dichlorobenzene	< .001	mg/l			WG498314	09/14/10 23:21
1,2-Dichloroethane	< .001	mg/l			WG498314	09/14/10 23:21
1,2-Dichloropropane	< .001	mg/l			WG498314	09/14/10 23:21
1,3,5-Trimethylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
1,3-Dichlorobenzene	< .001	mg/l			WG498314	09/14/10 23:21
1,3-Dichloropropane	< .001	mg/l			WG498314	09/14/10 23:21
1,4-Dichlorobenzene	< .001	mg/l			WG498314	09/14/10 23:21
2,2-Dichloropropane	< .001	mg/l			WG498314	09/14/10 23:21
2-Butanone (MEK)	< .01	mg/l			WG498314	09/14/10 23:21
2-Chloroethyl vinyl ether	< .05	mg/l			WG498314	09/14/10 23:21
2-Chlorotoluene	< .001	mg/l			WG498314	09/14/10 23:21
4-Chlorotoluene	< .001	mg/l			WG498314	09/14/10 23:21
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG498314	09/14/10 23:21
Acetone	< .05	mg/l			WG498314	09/14/10 23:21
Acrolein	< .05	mg/l			WG498314	09/14/10 23:21
Acrylonitrile	< .01	mg/l			WG498314	09/14/10 23:21
Benzene	< .001	mg/l			WG498314	09/14/10 23:21
Bromobenzene	< .001	mg/l			WG498314	09/14/10 23:21
Bromodichloromethane	< .001	mg/l			WG498314	09/14/10 23:21
Bromoform	< .001	mg/l			WG498314	09/14/10 23:21
Bromomethane	< .005	mg/l			WG498314	09/14/10 23:21
Carbon tetrachloride	< .001	mg/l			WG498314	09/14/10 23:21
Chlorobenzene	< .001	mg/l			WG498314	09/14/10 23:21
Chlorodibromomethane	< .001	mg/l			WG498314	09/14/10 23:21
Chloroethane	< .001	mg/l			WG498314	09/14/10 23:21
Chloroform	< .005	mg/l			WG498314	09/14/10 23:21
Chloromethane	< .001	mg/l			WG498314	09/14/10 23:21
cis-1,2-Dichloroethene	< .001	mg/l			WG498314	09/14/10 23:21
cis-1,3-Dichloropropene	< .001	mg/l			WG498314	09/14/10 23:21
Di-isopropyl ether	< .001	mg/l			WG498314	09/14/10 23:21
Dibromomethane	< .001	mg/l			WG498314	09/14/10 23:21
Dichlorodifluoromethane	< .005	mg/l			WG498314	09/14/10 23:21
Ethylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
Hexachloro-1,3-Butadiene	< .001	mg/l			WG498314	09/14/10 23:21
Isopropylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
Methyl tert-butyl ether	< .001	mg/l			WG498314	09/14/10 23:21
Methylene Chloride	< .005	mg/l			WG498314	09/14/10 23:21
n-Butylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
n-Propylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
Naphthalene	< .005	mg/l			WG498314	09/14/10 23:21
p-Isopropyltoluene	< .001	mg/l			WG498314	09/14/10 23:21
sec-Butylbenzene	< .001	mg/l			WG498314	09/14/10 23:21
Styrene	< .001	mg/l			WG498314	09/14/10 23:21
tert-Butylbenzene	< .001	mg/l			WG498314	09/14/10 23:21

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Amy Zach
9400 SW Barnes Rd., Suite 200

Portland, OR 97225

Quality Assurance Report
Level II

L478606

September 16, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Tetrachloroethene	< .001	mg/l			WG498314	09/14/10 23:21
Toluene	< .005	mg/l			WG498314	09/14/10 23:21
trans-1,2-Dichloroethene	< .001	mg/l			WG498314	09/14/10 23:21
trans-1,3-Dichloropropene	< .001	mg/l			WG498314	09/14/10 23:21
Trichloroethene	< .001	mg/l			WG498314	09/14/10 23:21
Trichlorofluoromethane	< .005	mg/l			WG498314	09/14/10 23:21
Vinyl chloride	< .001	mg/l			WG498314	09/14/10 23:21
Xylenes, Total	< .003	mg/l			WG498314	09/14/10 23:21
4-Bromofluorobenzene		% Rec.	107.8	75-128	WG498314	09/14/10 23:21
Dibromofluoromethane		% Rec.	105.0	79-125	WG498314	09/14/10 23:21
Toluene-d8		% Rec.	105.2	87-114	WG498314	09/14/10 23:21

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0283	113.	75-134	WG498314
1,1,1-Trichloroethane	mg/l	.025	0.0252	101.	67-137	WG498314
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0272	109.	72-128	WG498314
1,1,2-Trichloroethane	mg/l	.025	0.0266	106.	79-123	WG498314
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	.025	0.0161	64.5	51-149	WG498314
1,1-Dichloroethane	mg/l	.025	0.0232	93.0	67-133	WG498314
1,1-Dichloroethene	mg/l	.025	0.0195	78.1	60-130	WG498314
1,1-Dichloropropene	mg/l	.025	0.0253	101.	68-132	WG498314
1,2,3-Trichlorobenzene	mg/l	.025	0.0264	106.	63-138	WG498314
1,2,3-Trichloropropane	mg/l	.025	0.0271	109.	68-130	WG498314
1,2,3-Trimethylbenzene	mg/l	.025	0.0284	114.	70-127	WG498314
1,2,4-Trichlorobenzene	mg/l	.025	0.0269	108.	65-137	WG498314
1,2,4-Trimethylbenzene	mg/l	.025	0.0299	120.	72-135	WG498314
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0236	94.3	55-134	WG498314
1,2-Dibromoethane	mg/l	.025	0.0264	106.	75-126	WG498314
1,2-Dichlorobenzene	mg/l	.025	0.0273	109.	75-122	WG498314
1,2-Dichloroethane	mg/l	.025	0.0243	97.1	63-137	WG498314
1,2-Dichloropropane	mg/l	.025	0.0275	110.	74-122	WG498314
1,3,5-Trimethylbenzene	mg/l	.025	0.0292	117.	73-134	WG498314
1,3-Dichlorobenzene	mg/l	.025	0.0266	106.	73-131	WG498314
1,3-Dichloropropane	mg/l	.025	0.0261	105.	77-119	WG498314
1,4-Dichlorobenzene	mg/l	.025	0.0251	100.	70-121	WG498314
2,2-Dichloropropane	mg/l	.025	0.0250	99.8	46-151	WG498314
2-Butanone (MEK)	mg/l	.125	0.124	98.8	53-132	WG498314
2-Chloroethyl vinyl ether	mg/l	.125	0.125	99.6	0-171	WG498314
2-Chlorotoluene	mg/l	.025	0.0278	111.	74-128	WG498314
4-Chlorotoluene	mg/l	.025	0.0279	112.	74-130	WG498314
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.135	108.	60-142	WG498314
Acetone	mg/l	.125	0.111	88.7	48-134	WG498314
Acrolein	mg/l	.125	0.0919	73.5	6-182	WG498314
Acrylonitrile	mg/l	.125	0.115	92.1	60-140	WG498314
Benzene	mg/l	.025	0.0234	93.6	67-126	WG498314
Bromobenzene	mg/l	.025	0.0264	106.	76-123	WG498314
Bromodichloromethane	mg/l	.025	0.0287	115.	68-133	WG498314
Bromoform	mg/l	.025	0.0256	103.	60-139	WG498314
Bromomethane	mg/l	.025	0.0154	61.6	45-175	WG498314
Carbon tetrachloride	mg/l	.025	0.0248	99.0	64-141	WG498314
Chlorobenzene	mg/l	.025	0.0272	109.	77-125	WG498314
Chlorodibromomethane	mg/l	.025	0.0281	112.	73-138	WG498314
Chloroethane	mg/l	.025	0.0244	97.6	49-155	WG498314
Chloroform	mg/l	.025	0.0247	98.7	66-126	WG498314
Chloromethane	mg/l	.025	0.0240	95.8	45-152	WG498314
cis-1,2-Dichloroethene	mg/l	.025	0.0252	101.	72-128	WG498314
cis-1,3-Dichloropropene	mg/l	.025	0.0286	114.	73-131	WG498314

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L478606

September 16, 2010

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Di-isopropyl ether	mg/l	.025	0.0241	96.4	63-139	WG498314
Dibromomethane	mg/l	.025	0.0266	106.	73-125	WG498314
Dichlorodifluoromethane	mg/l	.025	0.0259	104.	39-189	WG498314
Ethylbenzene	mg/l	.025	0.0285	114.	76-129	WG498314
Hexachloro-1,3-Butadiene	mg/l	.025	0.0289	116.	67-135	WG498314
Isopropylbenzene	mg/l	.025	0.0239	95.7	73-132	WG498314
Methyl tert-butyl ether	mg/l	.025	0.0240	96.0	51-142	WG498314
Methylene Chloride	mg/l	.025	0.0232	92.9	64-125	WG498314
n-Butylbenzene	mg/l	.025	0.0259	103.	63-142	WG498314
n-Propylbenzene	mg/l	.025	0.0278	111.	71-132	WG498314
Naphthalene	mg/l	.025	0.0265	106.	56-145	WG498314
p-Isopropyltoluene	mg/l	.025	0.0257	103.	68-138	WG498314
sec-Butylbenzene	mg/l	.025	0.0260	104.	70-135	WG498314
Styrene	mg/l	.025	0.0315	126.	78-130	WG498314
tert-Butylbenzene	mg/l	.025	0.0258	103.	72-134	WG498314
Tetrachloroethene	mg/l	.025	0.0269	108.	67-135	WG498314
Toluene	mg/l	.025	0.0246	98.2	72-122	WG498314
trans-1,2-Dichloroethene	mg/l	.025	0.0240	96.2	67-129	WG498314
trans-1,3-Dichloropropene	mg/l	.025	0.0248	99.2	66-137	WG498314
Trichloroethene	mg/l	.025	0.0276	110.	74-126	WG498314
Trichlorofluoromethane	mg/l	.025	0.0236	94.2	54-156	WG498314
Vinyl chloride	mg/l	.025	0.0251	100.	55-153	WG498314
Xylenes, Total	mg/l	.075	0.0846	113.	75-128	WG498314
4-Bromofluorobenzene				106.3	75-128	WG498314
Dibromofluoromethane				97.39	79-125	WG498314
Toluene-d8				105.8	87-114	WG498314

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0281	0.0283	112.	75-134	0.510	20	WG498314
1,1,1-Trichloroethane	mg/l	0.0261	0.0252	104.	67-137	3.66	20	WG498314
1,1,2,2-Tetrachloroethane	mg/l	0.0256	0.0272	102.	72-128	5.99	20	WG498314
1,1,2-Trichloroethane	mg/l	0.0256	0.0266	102.	79-123	3.73	20	WG498314
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0172	0.0161	69.0	51-149	6.35	20	WG498314
1,1-Dichloroethane	mg/l	0.0236	0.0232	94.0	67-133	1.63	20	WG498314
1,1-Dichloroethene	mg/l	0.0203	0.0195	81.0	60-130	3.93	20	WG498314
1,1-Dichloropropene	mg/l	0.0262	0.0253	105.	68-132	3.27	20	WG498314
1,2,3-Trichlorobenzene	mg/l	0.0255	0.0264	102.	63-138	3.55	20	WG498314
1,2,3-Trichloropropane	mg/l	0.0252	0.0271	101.	68-130	7.33	20	WG498314
1,2,3-Trimethylbenzene	mg/l	0.0282	0.0284	113.	70-127	0.740	20	WG498314
1,2,4-Trichlorobenzene	mg/l	0.0261	0.0269	104.	65-137	2.91	20	WG498314
1,2,4-Trimethylbenzene	mg/l	0.0304	0.0299	121.	72-135	1.44	20	WG498314
1,2-Dibromo-3-Chloropropane	mg/l	0.0211	0.0236	84.0	55-134	11.1	20	WG498314
1,2-Dibromoethane	mg/l	0.0250	0.0264	100.	75-126	5.57	20	WG498314
1,2-Dichlorobenzene	mg/l	0.0267	0.0273	107.	75-122	2.44	20	WG498314
1,2-Dichloroethane	mg/l	0.0239	0.0243	95.0	63-137	1.70	20	WG498314
1,2-Dichloropropane	mg/l	0.0272	0.0275	109.	74-122	1.16	20	WG498314
1,3,5-Trimethylbenzene	mg/l	0.0293	0.0292	117.	73-134	0.320	20	WG498314
1,3-Dichlorobenzene	mg/l	0.0263	0.0266	105.	73-131	1.10	20	WG498314
1,3-Dichloropropane	mg/l	0.0247	0.0261	99.0	77-119	5.58	20	WG498314
1,4-Dichlorobenzene	mg/l	0.0248	0.0251	99.0	70-121	1.04	20	WG498314
2,2-Dichloropropane	mg/l	0.0267	0.0250	107.	46-151	6.79	20	WG498314
2-Butanone (MEK)	mg/l	0.115	0.124	92.0	53-132	7.14	20	WG498314
2-Chloroethyl vinyl ether	mg/l	0.117	0.125	94.0	0-171	6.18	27	WG498314
2-Chlorotoluene	mg/l	0.0280	0.0278	112.	74-128	0.500	20	WG498314
4-Chlorotoluene	mg/l	0.0279	0.0279	112.	74-130	0.0100	20	WG498314
4-Methyl-2-pentanone (MIBK)	mg/l	0.123	0.135	98.0	60-142	8.84	20	WG498314
Acetone	mg/l	0.0989	0.111	79.0	48-134	11.4	20	WG498314

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Portland, OR 97225

Quality Assurance Report
Level II

L478606

September 16, 2010

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Acrolein	mg/l	0.0842	0.0919	67.0	6-182	8.77	39	WG498314
Acrylonitrile	mg/l	0.105	0.115	84.0	60-140	9.39	20	WG498314
Benzene	mg/l	0.0234	0.0234	94.0	67-126	0.0100	20	WG498314
Bromobenzene	mg/l	0.0263	0.0264	105.	76-123	0.560	20	WG498314
Bromodichloromethane	mg/l	0.0284	0.0287	114.	68-133	1.21	20	WG498314
Bromoform	mg/l	0.0243	0.0256	97.0	60-139	5.44	20	WG498314
Bromomethane	mg/l	0.0162	0.0154	65.0	45-175	4.81	20	WG498314
Carbon tetrachloride	mg/l	0.0262	0.0248	105.	64-141	5.75	20	WG498314
Chlorobenzene	mg/l	0.0268	0.0272	107.	77-125	1.36	20	WG498314
Chlorodibromomethane	mg/l	0.0272	0.0281	109.	73-138	3.04	20	WG498314
Chloroethane	mg/l	0.0245	0.0244	98.0	49-155	0.490	20	WG498314
Chloroform	mg/l	0.0246	0.0247	98.0	66-126	0.270	20	WG498314
Chloromethane	mg/l	0.0242	0.0240	97.0	45-152	0.920	20	WG498314
cis-1,2-Dichloroethene	mg/l	0.0250	0.0252	100.	72-128	0.850	20	WG498314
cis-1,3-Dichloropropene	mg/l	0.0279	0.0286	112.	73-131	2.52	20	WG498314
Di-isopropyl ether	mg/l	0.0235	0.0241	94.0	63-139	2.31	20	WG498314
Dibromomethane	mg/l	0.0258	0.0266	103.	73-125	2.90	20	WG498314
Dichlorodifluoromethane	mg/l	0.0268	0.0259	107.	39-189	3.31	24	WG498314
Ethylbenzene	mg/l	0.0288	0.0285	115.	76-129	1.18	20	WG498314
Hexachloro-1,3-Butadiene	mg/l	0.0300	0.0289	120.	67-135	3.57	20	WG498314
Isopropylbenzene	mg/l	0.0243	0.0239	97.0	73-132	1.67	20	WG498314
Methyl tert-butyl ether	mg/l	0.0225	0.0240	90.0	51-142	6.47	20	WG498314
Methylene Chloride	mg/l	0.0228	0.0232	91.0	64-125	2.02	20	WG498314
n-Butylbenzene	mg/l	0.0266	0.0259	106.	63-142	2.61	20	WG498314
n-Propylbenzene	mg/l	0.0287	0.0278	115.	71-132	3.07	20	WG498314
Naphthalene	mg/l	0.0249	0.0265	99.0	56-145	6.55	20	WG498314
p-Isopropyltoluene	mg/l	0.0264	0.0257	105.	68-138	2.52	20	WG498314
sec-Butylbenzene	mg/l	0.0267	0.0260	107.	70-135	2.78	20	WG498314
Styrene	mg/l	0.0312	0.0315	125.	78-130	0.970	20	WG498314
tert-Butylbenzene	mg/l	0.0264	0.0258	106.	72-134	2.42	20	WG498314
Tetrachloroethene	mg/l	0.0273	0.0269	109.	67-135	1.38	20	WG498314
Toluene	mg/l	0.0251	0.0246	100.	72-122	2.19	20	WG498314
trans-1,2-Dichloroethene	mg/l	0.0244	0.0240	97.0	67-129	1.30	20	WG498314
trans-1,3-Dichloropropene	mg/l	0.0244	0.0248	97.0	66-137	1.82	20	WG498314
Trichloroethene	mg/l	0.0279	0.0276	111.	74-126	0.930	20	WG498314
Trichlorofluoromethane	mg/l	0.0251	0.0236	100.	54-156	6.20	20	WG498314
Vinyl chloride	mg/l	0.0255	0.0251	102.	55-153	1.86	20	WG498314
Xylenes, Total	mg/l	0.0853	0.0846	114.	75-128	0.840	20	WG498314
4-Bromofluorobenzene				104.4	75-128			WG498314
Dibromofluoromethane				97.14	79-125			WG498314
Toluene-d8				105.3	87-114			WG498314

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0270	0	.025	108.	45-152	L478606-01	WG498314
1,1,1-Trichloroethane	mg/l	0.0276	0	.025	110.	31-161	L478606-01	WG498314
1,1,2,2-Tetrachloroethane	mg/l	0.0266	0	.025	106.	49-149	L478606-01	WG498314
1,1,2-Trichloroethane	mg/l	0.0245	0	.025	98.0	46-145	L478606-01	WG498314
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0209	0	.025	83.4	14-168	L478606-01	WG498314
1,1-Dichloroethane	mg/l	0.0213	0	.025	85.3	30-159	L478606-01	WG498314
1,1-Dichloroethene	mg/l	0.0201	0	.025	80.5	10-162	L478606-01	WG498314
1,1-Dichloropropene	mg/l	0.0254	0	.025	102.	14-162	L478606-01	WG498314
1,2,3-Trichlorobenzene	mg/l	0.0240	0	.025	96.0	32-143	L478606-01	WG498314
1,2,3-Trichloropropane	mg/l	0.0270	0	.025	108.	48-148	L478606-01	WG498314
1,2,3-Trimethylbenzene	mg/l	0.0259	0	.025	104.	36-141	L478606-01	WG498314
1,2,4-Trichlorobenzene	mg/l	0.0244	0	.025	97.7	27-142	L478606-01	WG498314
1,2,4-Trimethylbenzene	mg/l	0.0298	0	.025	119.	29-153	L478606-01	WG498314
1,2-Dibromo-3-Chloropropane	mg/l	0.0219	0	.025	87.7	37-148	L478606-01	WG498314

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Quality Assurance Report
Level II

L478606

September 16, 2010

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2-Dibromoethane	mg/l	0.0231	0	.025	92.6	41-149	L478606-01	WG498314
1,2-Dichlorobenzene	mg/l	0.0240	0	.025	96.1	40-139	L478606-01	WG498314
1,2-Dichloroethane	mg/l	0.0203	0	.025	81.1	29-167	L478606-01	WG498314
1,2-Dichloropropane	mg/l	0.0236	0	.025	94.4	39-148	L478606-01	WG498314
1,3,5-Trimethylbenzene	mg/l	0.0301	0	.025	120.	33-149	L478606-01	WG498314
1,3-Dichlorobenzene	mg/l	0.0253	0	.025	101.	32-148	L478606-01	WG498314
1,3-Dichloropropane	mg/l	0.0232	0	.025	92.9	44-142	L478606-01	WG498314
1,4-Dichlorobenzene	mg/l	0.0224	0	.025	89.6	32-136	L478606-01	WG498314
2,2-Dichloropropane	mg/l	0.0274	0	.025	110.	14-158	L478606-01	WG498314
2-Butanone (MEK)	mg/l	0.113	0	.125	90.4	32-151	L478606-01	WG498314
2-Chloroethyl vinyl ether	mg/l	0.00110	0	.125	0.877	0-175	L478606-01	WG498314
2-Chlorotoluene	mg/l	0.0278	0	.025	111.	35-147	L478606-01	WG498314
4-Chlorotoluene	mg/l	0.0270	0	.025	108.	33-147	L478606-01	WG498314
4-Methyl-2-pentanone (MIBK)	mg/l	0.124	0	.125	99.5	40-160	L478606-01	WG498314
Acetone	mg/l	0.0910	0	.125	72.8	25-157	L478606-01	WG498314
Acrolein	mg/l	0.0682	0	.125	54.6	0-179	L478606-01	WG498314
Acrylonitrile	mg/l	0.105	0	.125	83.6	37-162	L478606-01	WG498314
Benzene	mg/l	0.0203	0	.025	81.3	16-158	L478606-01	WG498314
Bromobenzene	mg/l	0.0246	0	.025	98.3	37-147	L478606-01	WG498314
Bromodichloromethane	mg/l	0.0251	0	.025	100.	45-147	L478606-01	WG498314
Bromoform	mg/l	0.0241	0	.025	96.4	38-152	L478606-01	WG498314
Bromomethane	mg/l	0.0115	0	.025	46.0	0-191	L478606-01	WG498314
Carbon tetrachloride	mg/l	0.0288	0	.025	115.	22-168	L478606-01	WG498314
Chlorobenzene	mg/l	0.0250	0	.025	100.	33-148	L478606-01	WG498314
Chlorodibromomethane	mg/l	0.0255	0	.025	102.	48-151	L478606-01	WG498314
Chloroethane	mg/l	0.0207	0	.025	82.7	4-176	L478606-01	WG498314
Chloroform	mg/l	0.0219	0	.025	87.6	37-147	L478606-01	WG498314
Chloromethane	mg/l	0.0186	0	.025	74.6	10-174	L478606-01	WG498314
cis-1,2-Dichloroethene	mg/l	0.0216	0	.025	86.4	29-156	L478606-01	WG498314
cis-1,3-Dichloropropene	mg/l	0.0234	0	.025	93.6	35-148	L478606-01	WG498314
Di-isopropyl ether	mg/l	0.0210	0	.025	83.9	39-160	L478606-01	WG498314
Dibromomethane	mg/l	0.0222	0	.025	88.8	36-152	L478606-01	WG498314
Dichlorodifluoromethane	mg/l	0.0280	0	.025	112.	0-200	L478606-01	WG498314
Ethylbenzene	mg/l	0.0288	0	.025	115.	29-150	L478606-01	WG498314
Hexachloro-1,3-Butadiene	mg/l	0.0330	0	.025	132.	28-144	L478606-01	WG498314
Isopropylbenzene	mg/l	0.0264	0	.025	106.	35-147	L478606-01	WG498314
Methyl tert-butyl ether	mg/l	0.0206	0	.025	82.4	24-167	L478606-01	WG498314
Methylene Chloride	mg/l	0.0184	0	.025	73.6	23-151	L478606-01	WG498314
n-Butylbenzene	mg/l	0.0281	0	.025	112.	22-151	L478606-01	WG498314
n-Propylbenzene	mg/l	0.0305	0	.025	122.	26-150	L478606-01	WG498314
Naphthalene	mg/l	0.0243	0	.025	97.1	24-160	L478606-01	WG498314
p-Isopropyltoluene	mg/l	0.0288	0	.025	115.	28-151	L478606-01	WG498314
sec-Butylbenzene	mg/l	0.0304	0	.025	122.	32-149	L478606-01	WG498314
Styrene	mg/l	0.0294	0	.025	118.	38-149	L478606-01	WG498314
tert-Butylbenzene	mg/l	0.0291	0	.025	116.	36-149	L478606-01	WG498314
Tetrachloroethene	mg/l	0.0963	0.0570	.025	157.*	13-157	L478606-01	WG498314
Toluene	mg/l	0.0224	0	.025	89.7	22-152	L478606-01	WG498314
trans-1,2-Dichloroethene	mg/l	0.0206	0	.025	82.3	11-160	L478606-01	WG498314
trans-1,3-Dichloropropene	mg/l	0.0213	0	.025	85.4	33-153	L478606-01	WG498314
Trichloroethene	mg/l	0.0253	0	.025	101.	18-163	L478606-01	WG498314
Trichlorofluoromethane	mg/l	0.0273	0	.025	109.	10-177	L478606-01	WG498314
Vinyl chloride	mg/l	0.0231	0	.025	92.3	0-179	L478606-01	WG498314
Xylenes, Total	mg/l	0.0837	0	.075	112.	27-151	L478606-01	WG498314
4-Bromofluorobenzene					110.1	75-128		WG498314
Dibromofluoromethane					96.96	79-125		WG498314
Toluene-d8					105.2	87-114		WG498314

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Quality Assurance Report
Level II

L478606

September 16, 2010

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0255	0.0270	102.	45-152	5.74	21	L478606-01	WG498314
1,1,1-Trichloroethane	mg/l	0.0261	0.0276	104.	31-161	5.63	23	L478606-01	WG498314
1,1,2,2-Tetrachloroethane	mg/l	0.0255	0.0266	102.	49-149	4.12	22	L478606-01	WG498314
1,1,2-Trichloroethane	mg/l	0.0234	0.0245	93.4	46-145	4.84	20	L478606-01	WG498314
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0186	0.0209	74.4	14-168	11.5	24	L478606-01	WG498314
1,1-Dichloroethane	mg/l	0.0210	0.0213	84.0	30-159	1.51	21	L478606-01	WG498314
1,1-Dichloroethene	mg/l	0.0179	0.0201	71.5	10-162	11.8	23	L478606-01	WG498314
1,1-Dichloropropene	mg/l	0.0237	0.0254	94.7	14-162	7.18	23	L478606-01	WG498314
1,2,3-Trichlorobenzene	mg/l	0.0243	0.0240	97.1	32-143	1.12	33	L478606-01	WG498314
1,2,3-Trichloropropane	mg/l	0.0247	0.0270	98.8	48-148	9.06	23	L478606-01	WG498314
1,2,3-Trimethylbenzene	mg/l	0.0262	0.0259	105.	36-141	1.02	25	L478606-01	WG498314
1,2,4-Trichlorobenzene	mg/l	0.0248	0.0244	99.4	27-142	1.75	30	L478606-01	WG498314
1,2,4-Trimethylbenzene	mg/l	0.0276	0.0298	110.	29-153	7.89	27	L478606-01	WG498314
1,2-Dibromo-3-Chloropropane	mg/l	0.0226	0.0219	90.5	37-148	3.22	27	L478606-01	WG498314
1,2-Dibromoethane	mg/l	0.0225	0.0231	90.1	41-149	2.66	21	L478606-01	WG498314
1,2-Dichlorobenzene	mg/l	0.0251	0.0240	100.	40-139	4.42	23	L478606-01	WG498314
1,2-Dichloroethane	mg/l	0.0207	0.0203	82.7	29-167	1.98	21	L478606-01	WG498314
1,2-Dichloropropane	mg/l	0.0240	0.0236	95.9	39-148	1.50	20	L478606-01	WG498314
1,3,5-Trimethylbenzene	mg/l	0.0276	0.0301	110.	33-149	8.49	26	L478606-01	WG498314
1,3-Dichlorobenzene	mg/l	0.0238	0.0253	95.4	32-148	5.98	24	L478606-01	WG498314
1,3-Dichloropropane	mg/l	0.0223	0.0232	89.2	44-142	4.09	20	L478606-01	WG498314
1,4-Dichlorobenzene	mg/l	0.0231	0.0224	92.4	32-136	2.98	23	L478606-01	WG498314
2,2-Dichloropropane	mg/l	0.0267	0.0274	107.	14-158	2.47	23	L478606-01	WG498314
2-Butanone (MEK)	mg/l	0.110	0.113	87.9	32-151	2.80	26	L478606-01	WG498314
2-Chloroethyl vinyl ether	mg/l	0.000316	0.00110	0.253	0-175	111.*	75	L478606-01	WG498314
2-Chlorotoluene	mg/l	0.0258	0.0278	103.	35-147	7.45	24	L478606-01	WG498314
4-Chlorotoluene	mg/l	0.0256	0.0270	102.	33-147	5.29	25	L478606-01	WG498314
4-Methyl-2-pentanone (MIBK)	mg/l	0.124	0.124	99.1	40-160	0.440	28	L478606-01	WG498314
Acetone	mg/l	0.0916	0.0910	73.3	25-157	0.630	26	L478606-01	WG498314
Acrolein	mg/l	0.0708	0.0682	56.6	0-179	3.74	39	L478606-01	WG498314
Acrylonitrile	mg/l	0.103	0.105	82.6	37-162	1.32	24	L478606-01	WG498314
Benzene	mg/l	0.0199	0.0203	79.5	16-158	2.25	21	L478606-01	WG498314
Bromobenzene	mg/l	0.0236	0.0246	94.5	37-147	3.88	23	L478606-01	WG498314
Bromodichloromethane	mg/l	0.0256	0.0251	102.	45-147	1.72	20	L478606-01	WG498314
Bromoform	mg/l	0.0231	0.0241	92.4	38-152	4.20	20	L478606-01	WG498314
Bromomethane	mg/l	0.0121	0.0115	48.6	0-191	5.41	35	L478606-01	WG498314
Carbon tetrachloride	mg/l	0.0262	0.0288	105.	22-168	9.58	24	L478606-01	WG498314
Chlorobenzene	mg/l	0.0234	0.0250	93.6	33-148	6.63	22	L478606-01	WG498314
Chlorodibromomethane	mg/l	0.0250	0.0255	99.8	48-151	2.29	21	L478606-01	WG498314
Chloroethane	mg/l	0.0200	0.0207	80.2	4-176	3.13	27	L478606-01	WG498314
Chloroform	mg/l	0.0221	0.0219	88.5	37-147	1.09	21	L478606-01	WG498314
Chloromethane	mg/l	0.0177	0.0186	70.8	10-174	5.26	28	L478606-01	WG498314
cis-1,2-Dichloroethene	mg/l	0.0212	0.0216	84.8	29-156	1.88	22	L478606-01	WG498314
cis-1,3-Dichloropropene	mg/l	0.0228	0.0234	91.3	35-148	2.42	21	L478606-01	WG498314
Di-isopropyl ether	mg/l	0.0211	0.0210	84.3	39-160	0.470	21	L478606-01	WG498314
Dibromomethane	mg/l	0.0224	0.0222	89.5	36-152	0.750	20	L478606-01	WG498314
Dichlorodifluoromethane	mg/l	0.0249	0.0280	99.4	0-200	12.0	26	L478606-01	WG498314
Ethylbenzene	mg/l	0.0264	0.0288	105.	29-150	8.87	24	L478606-01	WG498314
Hexachloro-1,3-Butadiene	mg/l	0.0312	0.0330	125.	28-144	5.64	33	L478606-01	WG498314
Isopropylbenzene	mg/l	0.0235	0.0264	93.9	35-147	11.8	25	L478606-01	WG498314
Methyl tert-butyl ether	mg/l	0.0207	0.0206	83.0	24-167	0.700	22	L478606-01	WG498314
Methylene Chloride	mg/l	0.0188	0.0184	75.1	23-151	1.94	21	L478606-01	WG498314
n-Butylbenzene	mg/l	0.0267	0.0281	107.	22-151	4.98	29	L478606-01	WG498314
n-Propylbenzene	mg/l	0.0273	0.0305	109.	26-150	11.2	25	L478606-01	WG498314
Naphthalene	mg/l	0.0251	0.0243	100.	24-160	3.13	37	L478606-01	WG498314
p-Isopropyltoluene	mg/l	0.0259	0.0288	104.	28-151	10.5	27	L478606-01	WG498314
sec-Butylbenzene	mg/l	0.0268	0.0304	107.	32-149	12.5	26	L478606-01	WG498314
Styrene	mg/l	0.0281	0.0294	112.	38-149	4.56	23	L478606-01	WG498314
tert-Butylbenzene	mg/l	0.0261	0.0291	104.	36-149	11.1	26	L478606-01	WG498314
Tetrachloroethene	mg/l	0.0858	0.0963	115.	13-157	11.5	24	L478606-01	WG498314

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Stantec Consulting - Tualatin, OR
Amy Zach
9400 SW Barnes Rd., Suite 200

Portland, OR 97225

Quality Assurance Report
Level II

L478606

September 16, 2010

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Toluene	mg/l	0.0220	0.0224	87.8	22-152	2.18	22	L478606-01	WG498314
trans-1,2-Dichloroethene	mg/l	0.0193	0.0206	77.3	11-160	6.27	23	L478606-01	WG498314
trans-1,3-Dichloropropene	mg/l	0.0216	0.0213	86.4	33-153	1.23	22	L478606-01	WG498314
Trichloroethene	mg/l	0.0240	0.0253	95.9	18-163	5.28	21	L478606-01	WG498314
Trichlorofluoromethane	mg/l	0.0252	0.0273	101.	10-177	7.95	24	L478606-01	WG498314
Vinyl chloride	mg/l	0.0209	0.0231	83.4	0-179	10.1	26	L478606-01	WG498314
Xylenes, Total	mg/l	0.0764	0.0837	102.	27-151	9.03	23	L478606-01	WG498314
4-Bromofluorobenzene				105.4	75-128				WG498314
Dibromofluoromethane				96.52	79-125				WG498314
Toluene-d8				104.7	87-114				WG498314

Batch number /Run number / Sample number cross reference

WG498314: R1376890: L478606-01 02 03 04 05 06 07 08 09

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Amy Zach
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

Quality Assurance Report
Level II

L478606

September 16, 2010

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Portland,OR 97225

Billing information:
Accounts Payable
9400 SW Barnes Rd., Suite 200
Portland,OR 97225

Analysis/Container/Preservative

Chain of Custody
Page ___ of ___

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Phone: (615) 758-5858
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C085

Report to: Amy Zach
Email: amy.zach@stantec.com; ross.

Project Description: Brunswick Bayliner Marine
City/State Collected: Arlington, WA

Phone: (503) 297-2030
FAX: (503) 297-5429
Client Project #: 190402025
Lab Project #: SECORTOR-BRUNSWICK

Collected by (print): Janet Nash
Site/Facility ID#:
P.O.#:

Collected by (signature): Janet Nash
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day.....100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed
Email? ___No X Yes
FAX? ___No ___Yes

Acctnum: SECORTOR (lab use only)
Template/Prelogin: T64847/ P332321
Cooler #: ✓ 9/7
Shipped Via: FedEX Standard

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260 40mlAmb-HCl	V8260- Trip Blank 40mlAmb-HCl-Blk	Remarks/Contaminant	Sample # (lab only)
MW-1		GW		9/9/10	1200	3	X			L478606-01
MW-2		GW		9/9/10	1135	3	X			-02
MW-3		GW		9/9/10	0925	3	X			-03
MW-4		GW		9/9/10	1110	3	X			-04
MW-5		GW		9/9/10	1020	3	X			-05
MW-6		GW		9/9/10	0952	3	X			-06
MW-7		GW		9/9/10	1045	3	X			-07
DUP-1		GW		9/9/10	1202	3	X			-08
Trip Blank		GW				3	X	X		-09

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
Janet Nash	9/13/10	1500			ok
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4 Bottles Received: 25	COC Seal Intact: ___Y ___N ___NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Matthew Woodard	Date: 9/14/10 Time: 09:00	pH Checked: NCF:

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Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

Report Summary

Tuesday December 28, 2010

Report Number: L495201
Samples Received: 12/23/10
Client Project: 190402126

Description: Brunswick Bayliner Marine

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-01

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-1

Collected By : Janet Nash
Collection Date : 12/21/10 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/24/10	1
Acrolein	BDL	50.	ug/l	8260B	12/24/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/24/10	1
Benzene	BDL	1.0	ug/l	8260B	12/24/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/24/10	1
Bromoform	BDL	1.0	ug/l	8260B	12/24/10	1
Bromomethane	BDL	5.0	ug/l	8260B	12/24/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/24/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/24/10	1
Chloroethane	BDL	5.0	ug/l	8260B	12/24/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/24/10	1
Chloroform	BDL	5.0	ug/l	8260B	12/24/10	1
Chloromethane	BDL	2.5	ug/l	8260B	12/24/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/24/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/24/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/24/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/24/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/24/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/24/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/24/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/24/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	12/24/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/24/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-01

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-1

Collected By : Janet Nash
Collection Date : 12/21/10 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/24/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/24/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/24/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/24/10	1
Naphthalene	BDL	5.0	ug/l	8260B	12/24/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Styrene	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	12/24/10	1
Tetrachloroethene	43.	1.0	ug/l	8260B	12/24/10	1
Toluene	BDL	5.0	ug/l	8260B	12/24/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/24/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/24/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/24/10	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	12/24/10	1
Dibromofluoromethane	98.4		% Rec.	8260B	12/24/10	1
4-Bromofluorobenzene	105.		% Rec.	8260B	12/24/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 12/28/10 14:09 Printed: 12/28/10 14:09

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-02

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-2

Collected By : Janet Nash
Collection Date : 12/21/10 11:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/24/10	1
Acrolein	BDL	50.	ug/l	8260B	12/24/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/24/10	1
Benzene	BDL	1.0	ug/l	8260B	12/24/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/24/10	1
Bromoform	BDL	1.0	ug/l	8260B	12/24/10	1
Bromomethane	BDL	5.0	ug/l	8260B	12/24/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/24/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/24/10	1
Chloroethane	BDL	5.0	ug/l	8260B	12/24/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/24/10	1
Chloroform	BDL	5.0	ug/l	8260B	12/24/10	1
Chloromethane	BDL	2.5	ug/l	8260B	12/24/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/24/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/24/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/24/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/24/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/24/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/24/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/24/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/24/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	12/24/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/24/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-02

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-2

Collected By : Janet Nash
Collection Date : 12/21/10 11:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/24/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/24/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/24/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/24/10	1
Naphthalene	BDL	5.0	ug/l	8260B	12/24/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Styrene	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	12/24/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
Toluene	BDL	5.0	ug/l	8260B	12/24/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/24/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/24/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/24/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	12/24/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/24/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/24/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/24/10	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	12/24/10	1
Dibromofluoromethane	98.3		% Rec.	8260B	12/24/10	1
4-Bromofluorobenzene	102.		% Rec.	8260B	12/24/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-03

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Site ID :

Sample ID : MW-3

Project # : 190402126

Collected By : Janet Nash
Collection Date : 12/21/10 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/25/10	1
Acrolein	BDL	50.	ug/l	8260B	12/25/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/25/10	1
Benzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/25/10	1
Bromoform	BDL	1.0	ug/l	8260B	12/25/10	1
Bromomethane	BDL	5.0	ug/l	8260B	12/25/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
Chloroethane	BDL	5.0	ug/l	8260B	12/25/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/25/10	1
Chloroform	BDL	5.0	ug/l	8260B	12/25/10	1
Chloromethane	BDL	2.5	ug/l	8260B	12/25/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/25/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	12/25/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-03

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Site ID :

Sample ID : MW-3

Project # : 190402126

Collected By : Janet Nash
Collection Date : 12/21/10 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/25/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/25/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/25/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Naphthalene	BDL	5.0	ug/l	8260B	12/25/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Styrene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	12/25/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Toluene	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/25/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/25/10	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	12/25/10	1
Dibromofluoromethane	98.3		% Rec.	8260B	12/25/10	1
4-Bromofluorobenzene	102.		% Rec.	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-04

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-4

Collected By : Janet Nash
Collection Date : 12/21/10 10:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/25/10	1
Acrolein	BDL	50.	ug/l	8260B	12/25/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/25/10	1
Benzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/25/10	1
Bromoform	BDL	1.0	ug/l	8260B	12/25/10	1
Bromomethane	BDL	5.0	ug/l	8260B	12/25/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
Chloroethane	BDL	5.0	ug/l	8260B	12/25/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/25/10	1
Chloroform	BDL	5.0	ug/l	8260B	12/25/10	1
Chloromethane	BDL	2.5	ug/l	8260B	12/25/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/25/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	12/25/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-4

Collected By : Janet Nash
Collection Date : 12/21/10 10:40

ESC Sample # : L495201-04

Site ID :

Project # : 190402126

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/25/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/25/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/25/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Naphthalene	BDL	5.0	ug/l	8260B	12/25/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Styrene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	12/25/10	1
Tetrachloroethene	7.7	1.0	ug/l	8260B	12/25/10	1
Toluene	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/25/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/25/10	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	12/25/10	1
Dibromofluoromethane	97.6		% Rec.	8260B	12/25/10	1
4-Bromofluorobenzene	102.		% Rec.	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-05

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-5

Collected By : Janet Nash
Collection Date : 12/21/10 09:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/25/10	1
Acrolein	BDL	50.	ug/l	8260B	12/25/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/25/10	1
Benzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/25/10	1
Bromoform	BDL	1.0	ug/l	8260B	12/25/10	1
Bromomethane	BDL	5.0	ug/l	8260B	12/25/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
Chloroethane	BDL	5.0	ug/l	8260B	12/25/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/25/10	1
Chloroform	BDL	5.0	ug/l	8260B	12/25/10	1
Chloromethane	BDL	2.5	ug/l	8260B	12/25/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/25/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	12/25/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-05

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Site ID :

Sample ID : MW-5

Project # : 190402126

Collected By : Janet Nash
Collection Date : 12/21/10 09:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/25/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/25/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/25/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Naphthalene	BDL	5.0	ug/l	8260B	12/25/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Styrene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	12/25/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Toluene	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/25/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/25/10	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	12/25/10	1
Dibromofluoromethane	98.4		% Rec.	8260B	12/25/10	1
4-Bromofluorobenzene	102.		% Rec.	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 12/28/10 14:09 Printed: 12/28/10 14:09

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-06

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-6

Collected By : Janet Nash
Collection Date : 12/21/10 09:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/25/10	1
Acrolein	BDL	50.	ug/l	8260B	12/25/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/25/10	1
Benzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/25/10	1
Bromoform	BDL	1.0	ug/l	8260B	12/25/10	1
Bromomethane	BDL	5.0	ug/l	8260B	12/25/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
Chloroethane	BDL	5.0	ug/l	8260B	12/25/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/25/10	1
Chloroform	BDL	5.0	ug/l	8260B	12/25/10	1
Chloromethane	BDL	2.5	ug/l	8260B	12/25/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/25/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	12/25/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-06

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Site ID :

Sample ID : MW-6

Project # : 190402126

Collected By : Janet Nash
Collection Date : 12/21/10 09:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/25/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/25/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/25/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Naphthalene	BDL	5.0	ug/l	8260B	12/25/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Styrene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	12/25/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Toluene	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/25/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/25/10	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	12/25/10	1
Dibromofluoromethane	96.1		% Rec.	8260B	12/25/10	1
4-Bromofluorobenzene	102.		% Rec.	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 12/28/10 14:09 Printed: 12/28/10 14:09

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-07

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-7

Collected By : Janet Nash
Collection Date : 12/21/10 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/25/10	1
Acrolein	BDL	50.	ug/l	8260B	12/25/10	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/25/10	1
Benzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/25/10	1
Bromoform	BDL	1.0	ug/l	8260B	12/25/10	1
Bromomethane	BDL	5.0	ug/l	8260B	12/25/10	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
Chloroethane	BDL	5.0	ug/l	8260B	12/25/10	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/25/10	1
Chloroform	BDL	5.0	ug/l	8260B	12/25/10	1
Chloromethane	BDL	2.5	ug/l	8260B	12/25/10	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/25/10	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/25/10	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Hexachloro-1,3-Butadiene	BDL	1.0	ug/l	8260B	12/25/10	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Amy Zach
Stantec Consulting - Tualatin, OR
9400 SW Barnes Rd., Suite 200
Portland, OR 97225

December 28,2010

ESC Sample # : L495201-07

Site ID :

Project # : 190402126

Date Received : December 23, 2010
Description : Brunswick Bayliner Marine 4Q10

Sample ID : MW-7

Collected By : Janet Nash
Collection Date : 12/21/10 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/25/10	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/25/10	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/25/10	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/25/10	1
Naphthalene	BDL	5.0	ug/l	8260B	12/25/10	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Styrene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	1.0	ug/l	8260B	12/25/10	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Toluene	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/25/10	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/25/10	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/25/10	1
1,2,3-Trichloropropane	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/25/10	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/25/10	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/25/10	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	12/25/10	1
Dibromofluoromethane	97.4		% Rec.	8260B	12/25/10	1
4-Bromofluorobenzene	101.		% Rec.	8260B	12/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 12/28/10 14:09 Printed: 12/28/10 14:09

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L495201-01	WG514918	SAMP	Acrolein	R1516950	V

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
12/28/10 at 14:09:45

TSR Signing Reports: 358
R5 - Desired TAT

pending response from client 12/13/10

Sample: L495201-01 Account: SECORTOR Received: 12/23/10 09:00 Due Date: 12/31/10 00:00 RPT Date: 12/28/10 14:09
HOLD results pending approval from accounting. Check with Melanie. jw 12/28
Sample: L495201-02 Account: SECORTOR Received: 12/23/10 09:00 Due Date: 12/31/10 00:00 RPT Date: 12/28/10 14:09
HOLD results pending approval from accounting. Check with Melanie. jw 12/28
Sample: L495201-03 Account: SECORTOR Received: 12/23/10 09:00 Due Date: 12/31/10 00:00 RPT Date: 12/28/10 14:09
HOLD results pending approval from accounting. Check with Melanie. jw 12/28
Sample: L495201-04 Account: SECORTOR Received: 12/23/10 09:00 Due Date: 12/31/10 00:00 RPT Date: 12/28/10 14:09
HOLD results pending approval from accounting. Check with Melanie. jw 12/28
Sample: L495201-05 Account: SECORTOR Received: 12/23/10 09:00 Due Date: 12/31/10 00:00 RPT Date: 12/28/10 14:09
HOLD results pending approval from accounting. Check with Melanie. jw 12/28
Sample: L495201-06 Account: SECORTOR Received: 12/23/10 09:00 Due Date: 12/31/10 00:00 RPT Date: 12/28/10 14:09
HOLD results pending approval from accounting. Check with Melanie. jw 12/28
Sample: L495201-07 Account: SECORTOR Received: 12/23/10 09:00 Due Date: 12/31/10 00:00 RPT Date: 12/28/10 14:09
HOLD results pending approval from accounting. Check with Melanie. jw 12/28

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Quality Assurance Report
Level II

L495201

December 28, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG514918	12/24/10 22:55
1,1,1-Trichloroethane	< .001	mg/l			WG514918	12/24/10 22:55
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG514918	12/24/10 22:55
1,1,2-Trichloroethane	< .001	mg/l			WG514918	12/24/10 22:55
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/l			WG514918	12/24/10 22:55
1,1-Dichloroethane	< .001	mg/l			WG514918	12/24/10 22:55
1,1-Dichloroethene	< .001	mg/l			WG514918	12/24/10 22:55
1,1-Dichloropropene	< .001	mg/l			WG514918	12/24/10 22:55
1,2,3-Trichlorobenzene	< .001	mg/l			WG514918	12/24/10 22:55
1,2,3-Trichloropropane	< .001	mg/l			WG514918	12/24/10 22:55
1,2,3-Trimethylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
1,2,4-Trichlorobenzene	< .001	mg/l			WG514918	12/24/10 22:55
1,2,4-Trimethylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG514918	12/24/10 22:55
1,2-Dibromoethane	< .001	mg/l			WG514918	12/24/10 22:55
1,2-Dichlorobenzene	< .001	mg/l			WG514918	12/24/10 22:55
1,2-Dichloroethane	< .001	mg/l			WG514918	12/24/10 22:55
1,2-Dichloropropane	< .001	mg/l			WG514918	12/24/10 22:55
1,3,5-Trimethylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
1,3-Dichlorobenzene	< .001	mg/l			WG514918	12/24/10 22:55
1,3-Dichloropropane	< .001	mg/l			WG514918	12/24/10 22:55
1,4-Dichlorobenzene	< .001	mg/l			WG514918	12/24/10 22:55
2,2-Dichloropropane	< .001	mg/l			WG514918	12/24/10 22:55
2-Butanone (MEK)	< .01	mg/l			WG514918	12/24/10 22:55
2-Chloroethyl vinyl ether	< .05	mg/l			WG514918	12/24/10 22:55
2-Chlorotoluene	< .001	mg/l			WG514918	12/24/10 22:55
4-Chlorotoluene	< .001	mg/l			WG514918	12/24/10 22:55
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG514918	12/24/10 22:55
Acetone	< .05	mg/l			WG514918	12/24/10 22:55
Acrolein	< .05	mg/l			WG514918	12/24/10 22:55
Acrylonitrile	< .01	mg/l			WG514918	12/24/10 22:55
Benzene	< .001	mg/l			WG514918	12/24/10 22:55
Bromobenzene	< .001	mg/l			WG514918	12/24/10 22:55
Bromodichloromethane	< .001	mg/l			WG514918	12/24/10 22:55
Bromoform	< .001	mg/l			WG514918	12/24/10 22:55
Bromomethane	< .005	mg/l			WG514918	12/24/10 22:55
Carbon tetrachloride	< .001	mg/l			WG514918	12/24/10 22:55
Chlorobenzene	< .001	mg/l			WG514918	12/24/10 22:55
Chlorodibromomethane	< .001	mg/l			WG514918	12/24/10 22:55
Chloroethane	< .001	mg/l			WG514918	12/24/10 22:55
Chloroform	< .005	mg/l			WG514918	12/24/10 22:55
Chloromethane	< .001	mg/l			WG514918	12/24/10 22:55
cis-1,2-Dichloroethene	< .001	mg/l			WG514918	12/24/10 22:55
cis-1,3-Dichloropropene	< .001	mg/l			WG514918	12/24/10 22:55
Di-isopropyl ether	< .001	mg/l			WG514918	12/24/10 22:55
Dibromomethane	< .001	mg/l			WG514918	12/24/10 22:55
Dichlorodifluoromethane	< .005	mg/l			WG514918	12/24/10 22:55
Ethylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
Hexachloro-1,3-Butadiene	< .001	mg/l			WG514918	12/24/10 22:55
Isopropylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
Methyl tert-butyl ether	< .001	mg/l			WG514918	12/24/10 22:55
Methylene Chloride	< .005	mg/l			WG514918	12/24/10 22:55
n-Butylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
n-Propylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
Naphthalene	< .005	mg/l			WG514918	12/24/10 22:55
p-Isopropyltoluene	< .001	mg/l			WG514918	12/24/10 22:55
sec-Butylbenzene	< .001	mg/l			WG514918	12/24/10 22:55
Styrene	< .001	mg/l			WG514918	12/24/10 22:55
tert-Butylbenzene	< .001	mg/l			WG514918	12/24/10 22:55

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Quality Assurance Report
Level II

L495201

December 28, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Tetrachloroethene	< .001	mg/l			WG514918	12/24/10 22:55
Toluene	< .005	mg/l			WG514918	12/24/10 22:55
trans-1,2-Dichloroethene	< .001	mg/l			WG514918	12/24/10 22:55
trans-1,3-Dichloropropene	< .001	mg/l			WG514918	12/24/10 22:55
Trichloroethene	< .001	mg/l			WG514918	12/24/10 22:55
Trichlorofluoromethane	< .005	mg/l			WG514918	12/24/10 22:55
Vinyl chloride	< .001	mg/l			WG514918	12/24/10 22:55
Xylenes, Total	< .003	mg/l			WG514918	12/24/10 22:55
4-Bromofluorobenzene		% Rec.	102.7	75-128	WG514918	12/24/10 22:55
Dibromofluoromethane		% Rec.	96.21	79-125	WG514918	12/24/10 22:55
Toluene-d8		% Rec.	101.4	87-114	WG514918	12/24/10 22:55

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0221	88.4	75-134	WG514918
1,1,1-Trichloroethane	mg/l	.025	0.0201	80.5	67-137	WG514918
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0231	92.5	72-128	WG514918
1,1,2-Trichloroethane	mg/l	.025	0.0228	91.3	79-123	WG514918
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	.025	0.0217	86.7	51-149	WG514918
1,1-Dichloroethane	mg/l	.025	0.0218	87.3	67-133	WG514918
1,1-Dichloroethene	mg/l	.025	0.0218	87.1	60-130	WG514918
1,1-Dichloropropene	mg/l	.025	0.0212	84.9	68-132	WG514918
1,2,3-Trichlorobenzene	mg/l	.025	0.0244	97.7	63-138	WG514918
1,2,3-Trichloropropane	mg/l	.025	0.0226	90.4	68-130	WG514918
1,2,3-Trimethylbenzene	mg/l	.025	0.0211	84.4	70-127	WG514918
1,2,4-Trichlorobenzene	mg/l	.025	0.0243	97.3	65-137	WG514918
1,2,4-Trimethylbenzene	mg/l	.025	0.0218	87.4	72-135	WG514918
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0219	87.7	55-134	WG514918
1,2-Dibromoethane	mg/l	.025	0.0224	89.6	75-126	WG514918
1,2-Dichlorobenzene	mg/l	.025	0.0226	90.2	75-122	WG514918
1,2-Dichloroethane	mg/l	.025	0.0195	77.9	63-137	WG514918
1,2-Dichloropropane	mg/l	.025	0.0220	88.1	74-122	WG514918
1,3,5-Trimethylbenzene	mg/l	.025	0.0221	88.5	73-134	WG514918
1,3-Dichlorobenzene	mg/l	.025	0.0234	93.6	73-131	WG514918
1,3-Dichloropropane	mg/l	.025	0.0229	91.5	77-119	WG514918
1,4-Dichlorobenzene	mg/l	.025	0.0224	89.5	70-121	WG514918
2,2-Dichloropropane	mg/l	.025	0.0202	80.8	46-151	WG514918
2-Butanone (MEK)	mg/l	.125	0.108	86.1	53-132	WG514918
2-Chloroethyl vinyl ether	mg/l	.125	0.152	122.	0-171	WG514918
2-Chlorotoluene	mg/l	.025	0.0220	87.8	74-128	WG514918
4-Chlorotoluene	mg/l	.025	0.0219	87.6	74-130	WG514918
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.102	81.8	60-142	WG514918
Acetone	mg/l	.125	0.115	91.8	48-134	WG514918
Acrolein	mg/l	.125	0.105	84.1	6-182	WG514918
Acrylonitrile	mg/l	.125	0.116	92.8	60-140	WG514918
Benzene	mg/l	.025	0.0213	85.2	67-126	WG514918
Bromobenzene	mg/l	.025	0.0218	87.3	76-123	WG514918
Bromodichloromethane	mg/l	.025	0.0204	81.8	68-133	WG514918
Bromoform	mg/l	.025	0.0232	92.8	60-139	WG514918
Bromomethane	mg/l	.025	0.0242	96.8	45-175	WG514918
Carbon tetrachloride	mg/l	.025	0.0197	78.7	64-141	WG514918
Chlorobenzene	mg/l	.025	0.0231	92.4	77-125	WG514918
Chlorodibromomethane	mg/l	.025	0.0220	88.0	73-138	WG514918
Chloroethane	mg/l	.025	0.0218	87.0	49-155	WG514918
Chloroform	mg/l	.025	0.0210	84.0	66-126	WG514918
Chloromethane	mg/l	.025	0.0208	83.2	45-152	WG514918
cis-1,2-Dichloroethene	mg/l	.025	0.0215	86.0	72-128	WG514918
cis-1,3-Dichloropropene	mg/l	.025	0.0216	86.6	73-131	WG514918

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Quality Assurance Report
Level II

L495201

December 28, 2010

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Di-isopropyl ether	mg/l	.025	0.0211	84.6	63-139	WG514918
Dibromomethane	mg/l	.025	0.0203	81.3	73-125	WG514918
Dichlorodifluoromethane	mg/l	.025	0.0186	74.3	39-189	WG514918
Ethylbenzene	mg/l	.025	0.0218	87.2	76-129	WG514918
Hexachloro-1,3-Butadiene	mg/l	.025	0.0248	99.1	67-135	WG514918
Isopropylbenzene	mg/l	.025	0.0223	89.2	73-132	WG514918
Methyl tert-butyl ether	mg/l	.025	0.0208	83.0	51-142	WG514918
Methylene Chloride	mg/l	.025	0.0209	83.7	64-125	WG514918
n-Butylbenzene	mg/l	.025	0.0215	86.0	63-142	WG514918
n-Propylbenzene	mg/l	.025	0.0221	88.6	71-132	WG514918
Naphthalene	mg/l	.025	0.0222	88.9	56-145	WG514918
p-Isopropyltoluene	mg/l	.025	0.0225	90.2	68-138	WG514918
sec-Butylbenzene	mg/l	.025	0.0228	91.4	70-135	WG514918
Styrene	mg/l	.025	0.0235	94.0	78-130	WG514918
tert-Butylbenzene	mg/l	.025	0.0228	91.1	72-134	WG514918
Tetrachloroethene	mg/l	.025	0.0230	92.1	67-135	WG514918
Toluene	mg/l	.025	0.0210	83.8	72-122	WG514918
trans-1,2-Dichloroethene	mg/l	.025	0.0213	85.0	67-129	WG514918
trans-1,3-Dichloropropene	mg/l	.025	0.0215	86.1	66-137	WG514918
Trichloroethene	mg/l	.025	0.0222	88.8	74-126	WG514918
Trichlorofluoromethane	mg/l	.025	0.0199	79.5	54-156	WG514918
Vinyl chloride	mg/l	.025	0.0204	81.5	55-153	WG514918
Xylenes, Total	mg/l	.075	0.0664	88.5	75-128	WG514918
4-Bromofluorobenzene				101.6	75-128	WG514918
Dibromofluoromethane				98.39	79-125	WG514918
Toluene-d8				102.3	87-114	WG514918

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0237	0.0221	95.0	75-134	6.98	20	WG514918
1,1,1-Trichloroethane	mg/l	0.0222	0.0201	89.0	67-137	9.91	20	WG514918
1,1,2,2-Tetrachloroethane	mg/l	0.0234	0.0231	94.0	72-128	1.38	20	WG514918
1,1,2-Trichloroethane	mg/l	0.0238	0.0228	95.0	79-123	4.13	20	WG514918
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0243	0.0217	97.0	51-149	11.3	20	WG514918
1,1-Dichloroethane	mg/l	0.0237	0.0218	95.0	67-133	8.19	20	WG514918
1,1-Dichloroethene	mg/l	0.0238	0.0218	95.0	60-130	9.03	20	WG514918
1,1-Dichloropropene	mg/l	0.0235	0.0212	94.0	68-132	10.0	20	WG514918
1,2,3-Trichlorobenzene	mg/l	0.0258	0.0244	103.	63-138	5.51	20	WG514918
1,2,3-Trichloropropane	mg/l	0.0227	0.0226	91.0	68-130	0.420	20	WG514918
1,2,3-Trimethylbenzene	mg/l	0.0229	0.0211	92.0	70-127	8.13	20	WG514918
1,2,4-Trichlorobenzene	mg/l	0.0260	0.0243	104.	65-137	6.73	20	WG514918
1,2,4-Trimethylbenzene	mg/l	0.0238	0.0218	95.0	72-135	8.65	20	WG514918
1,2-Dibromo-3-Chloropropane	mg/l	0.0219	0.0219	88.0	55-134	0.110	20	WG514918
1,2-Dibromoethane	mg/l	0.0232	0.0224	93.0	75-126	3.70	20	WG514918
1,2-Dichlorobenzene	mg/l	0.0239	0.0226	95.0	75-122	5.66	20	WG514918
1,2-Dichloroethane	mg/l	0.0202	0.0195	81.0	63-137	3.51	20	WG514918
1,2-Dichloropropane	mg/l	0.0235	0.0220	94.0	74-122	6.54	20	WG514918
1,3,5-Trimethylbenzene	mg/l	0.0243	0.0221	97.0	73-134	9.44	20	WG514918
1,3-Dichlorobenzene	mg/l	0.0253	0.0234	101.	73-131	7.93	20	WG514918
1,3-Dichloropropane	mg/l	0.0237	0.0229	95.0	77-119	3.74	20	WG514918
1,4-Dichlorobenzene	mg/l	0.0242	0.0224	97.0	70-121	7.96	20	WG514918
2,2-Dichloropropane	mg/l	0.0228	0.0202	91.0	46-151	12.2	20	WG514918
2-Butanone (MEK)	mg/l	0.106	0.108	85.0	53-132	1.64	20	WG514918
2-Chloroethyl vinyl ether	mg/l	0.155	0.152	124.	0-171	1.49	27	WG514918
2-Chlorotoluene	mg/l	0.0238	0.0220	95.0	74-128	7.99	20	WG514918
4-Chlorotoluene	mg/l	0.0237	0.0219	95.0	74-130	7.81	20	WG514918
4-Methyl-2-pentanone (MIBK)	mg/l	0.101	0.102	81.0	60-142	1.11	20	WG514918
Acetone	mg/l	0.114	0.115	91.0	48-134	1.03	20	WG514918

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Quality Assurance Report
Level II

December 28, 2010

L495201

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Acrolein	mg/l	0.116	0.105	93.0	6-182	9.97	39	WG514918
Acrylonitrile	mg/l	0.116	0.116	93.0	60-140	0.110	20	WG514918
Benzene	mg/l	0.0232	0.0213	93.0	67-126	8.38	20	WG514918
Bromobenzene	mg/l	0.0234	0.0218	93.0	76-123	6.81	20	WG514918
Bromodichloromethane	mg/l	0.0215	0.0204	86.0	68-133	5.07	20	WG514918
Bromoform	mg/l	0.0237	0.0232	95.0	60-139	2.22	20	WG514918
Bromomethane	mg/l	0.0285	0.0242	114.	45-175	16.4	20	WG514918
Carbon tetrachloride	mg/l	0.0214	0.0197	86.0	64-141	8.55	20	WG514918
Chlorobenzene	mg/l	0.0246	0.0231	98.0	77-125	6.51	20	WG514918
Chlorodibromomethane	mg/l	0.0230	0.0220	92.0	73-138	4.32	20	WG514918
Chloroethane	mg/l	0.0235	0.0218	94.0	49-155	7.69	20	WG514918
Chloroform	mg/l	0.0226	0.0210	90.0	66-126	7.14	20	WG514918
Chloromethane	mg/l	0.0227	0.0208	91.0	45-152	8.80	20	WG514918
cis-1,2-Dichloroethene	mg/l	0.0230	0.0215	92.0	72-128	6.75	20	WG514918
cis-1,3-Dichloropropene	mg/l	0.0228	0.0216	91.0	73-131	5.33	20	WG514918
Di-isopropyl ether	mg/l	0.0226	0.0211	90.0	63-139	6.54	20	WG514918
Dibromomethane	mg/l	0.0211	0.0203	84.0	73-125	3.52	20	WG514918
Dichlorodifluoromethane	mg/l	0.0205	0.0186	82.0	39-189	9.98	24	WG514918
Ethylbenzene	mg/l	0.0237	0.0218	95.0	76-129	8.46	20	WG514918
Hexachloro-1,3-Butadiene	mg/l	0.0272	0.0248	109.	67-135	9.18	20	WG514918
Isopropylbenzene	mg/l	0.0247	0.0223	99.0	73-132	10.2	20	WG514918
Methyl tert-butyl ether	mg/l	0.0215	0.0208	86.0	51-142	3.55	20	WG514918
Methylene Chloride	mg/l	0.0222	0.0209	89.0	64-125	6.01	20	WG514918
n-Butylbenzene	mg/l	0.0237	0.0215	95.0	63-142	9.80	20	WG514918
n-Propylbenzene	mg/l	0.0244	0.0221	98.0	71-132	9.62	20	WG514918
Naphthalene	mg/l	0.0229	0.0222	92.0	56-145	3.06	20	WG514918
p-Isopropyltoluene	mg/l	0.0247	0.0225	99.0	68-138	9.06	20	WG514918
sec-Butylbenzene	mg/l	0.0250	0.0228	100.	70-135	8.81	20	WG514918
Styrene	mg/l	0.0254	0.0235	102.	78-130	7.74	20	WG514918
tert-Butylbenzene	mg/l	0.0248	0.0228	99.0	72-134	8.43	20	WG514918
Tetrachloroethene	mg/l	0.0253	0.0230	101.	67-135	9.49	20	WG514918
Toluene	mg/l	0.0226	0.0210	90.0	72-122	7.35	20	WG514918
trans-1,2-Dichloroethene	mg/l	0.0232	0.0213	93.0	67-129	8.87	20	WG514918
trans-1,3-Dichloropropene	mg/l	0.0226	0.0215	90.0	66-137	4.71	20	WG514918
Trichloroethene	mg/l	0.0240	0.0222	96.0	74-126	7.83	20	WG514918
Trichlorofluoromethane	mg/l	0.0220	0.0199	88.0	54-156	10.1	20	WG514918
Vinyl chloride	mg/l	0.0221	0.0204	88.0	55-153	8.11	20	WG514918
Xylenes, Total	mg/l	0.0722	0.0664	96.0	75-128	8.42	20	WG514918
4-Bromofluorobenzene				101.4	75-128			WG514918
Dibromofluoromethane				97.45	79-125			WG514918
Toluene-d8				100.9	87-114			WG514918

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0227	0	.025	91.0	45-152	L495201-01	WG514918
1,1,1-Trichloroethane	mg/l	0.0174	0	.025	69.5	31-161	L495201-01	WG514918
1,1,2,2-Tetrachloroethane	mg/l	0.0266	0	.025	106.	49-149	L495201-01	WG514918
1,1,2-Trichloroethane	mg/l	0.0247	0	.025	98.7	46-145	L495201-01	WG514918
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0144	0	.025	57.7	14-168	L495201-01	WG514918
1,1-Dichloroethane	mg/l	0.0189	0	.025	75.6	30-159	L495201-01	WG514918
1,1-Dichloroethene	mg/l	0.0131	0	.025	52.3	10-162	L495201-01	WG514918
1,1-Dichloropropene	mg/l	0.0154	0	.025	61.8	14-162	L495201-01	WG514918
1,2,3-Trichlorobenzene	mg/l	0.0238	0	.025	95.4	32-143	L495201-01	WG514918
1,2,3-Trichloropropane	mg/l	0.0252	0	.025	101.	48-148	L495201-01	WG514918
1,2,3-Trimethylbenzene	mg/l	0.0212	0	.025	84.8	36-141	L495201-01	WG514918
1,2,4-Trichlorobenzene	mg/l	0.0232	0	.025	92.8	27-142	L495201-01	WG514918
1,2,4-Trimethylbenzene	mg/l	0.0207	0	.025	82.7	29-153	L495201-01	WG514918
1,2-Dibromo-3-Chloropropane	mg/l	0.0247	0	.025	98.9	37-148	L495201-01	WG514918

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2-Dibromoethane	mg/l	0.0227	0	.025	91.0	41-149	L495201-01	WG514918
1,2-Dichlorobenzene	mg/l	0.0232	0	.025	92.7	40-139	L495201-01	WG514918
1,2-Dichloroethane	mg/l	0.0182	0	.025	72.8	29-167	L495201-01	WG514918
1,2-Dichloropropane	mg/l	0.0217	0	.025	86.7	39-148	L495201-01	WG514918
1,3,5-Trimethylbenzene	mg/l	0.0208	0	.025	83.3	33-149	L495201-01	WG514918
1,3-Dichlorobenzene	mg/l	0.0239	0	.025	95.4	32-148	L495201-01	WG514918
1,3-Dichloropropane	mg/l	0.0232	0	.025	92.8	44-142	L495201-01	WG514918
1,4-Dichlorobenzene	mg/l	0.0225	0	.025	89.9	32-136	L495201-01	WG514918
2,2-Dichloropropane	mg/l	0.0170	0	.025	67.9	14-158	L495201-01	WG514918
2-Butanone (MEK)	mg/l	0.113	0	.125	90.5	32-151	L495201-01	WG514918
2-Chloroethyl vinyl ether	mg/l	0.000375	0	.125	0.300	0-175	L495201-01	WG514918
2-Chlorotoluene	mg/l	0.0220	0	.025	87.8	35-147	L495201-01	WG514918
4-Chlorotoluene	mg/l	0.0224	0	.025	89.5	33-147	L495201-01	WG514918
4-Methyl-2-pentanone (MIBK)	mg/l	0.114	0	.125	91.3	40-160	L495201-01	WG514918
Acetone	mg/l	0.106	0	.125	84.7	25-157	L495201-01	WG514918
Acrolein	mg/l	0.503	0	.125	403.*	0-179	L495201-01	WG514918
Acrylonitrile	mg/l	0.123	0	.125	98.5	37-162	L495201-01	WG514918
Benzene	mg/l	0.0173	0	.025	69.2	16-158	L495201-01	WG514918
Bromobenzene	mg/l	0.0221	0	.025	88.2	37-147	L495201-01	WG514918
Bromodichloromethane	mg/l	0.0218	0	.025	87.0	45-147	L495201-01	WG514918
Bromoform	mg/l	0.0250	0	.025	100.	38-152	L495201-01	WG514918
Bromomethane	mg/l	0.0140	0	.025	55.9	0-191	L495201-01	WG514918
Carbon tetrachloride	mg/l	0.0160	0	.025	64.2	22-168	L495201-01	WG514918
Chlorobenzene	mg/l	0.0226	0	.025	90.2	33-148	L495201-01	WG514918
Chlorodibromomethane	mg/l	0.0231	0	.025	92.4	48-151	L495201-01	WG514918
Chloroethane	mg/l	0.0142	0	.025	56.6	4-176	L495201-01	WG514918
Chloroform	mg/l	0.0195	0	.025	78.1	37-147	L495201-01	WG514918
Chloromethane	mg/l	0.0117	0	.025	46.7	10-174	L495201-01	WG514918
cis-1,2-Dichloroethene	mg/l	0.0187	0	.025	74.8	29-156	L495201-01	WG514918
cis-1,3-Dichloropropene	mg/l	0.0216	0	.025	86.2	35-148	L495201-01	WG514918
Di-isopropyl ether	mg/l	0.0205	0	.025	82.0	39-160	L495201-01	WG514918
Dibromomethane	mg/l	0.0198	0	.025	79.1	36-152	L495201-01	WG514918
Dichlorodifluoromethane	mg/l	0.0111	0	.025	44.2	0-200	L495201-01	WG514918
Ethylbenzene	mg/l	0.0205	0	.025	82.0	29-150	L495201-01	WG514918
Hexachloro-1,3-Butadiene	mg/l	0.0231	0	.025	92.3	28-144	L495201-01	WG514918
Isopropylbenzene	mg/l	0.0201	0	.025	80.2	35-147	L495201-01	WG514918
Methyl tert-butyl ether	mg/l	0.0199	0	.025	79.5	24-167	L495201-01	WG514918
Methylene Chloride	mg/l	0.0174	0	.025	69.4	23-151	L495201-01	WG514918
n-Butylbenzene	mg/l	0.0202	0	.025	81.0	22-151	L495201-01	WG514918
n-Propylbenzene	mg/l	0.0214	0	.025	85.7	26-150	L495201-01	WG514918
Naphthalene	mg/l	0.0230	0	.025	91.9	24-160	L495201-01	WG514918
p-Isopropyltoluene	mg/l	0.0214	0	.025	85.5	28-151	L495201-01	WG514918
sec-Butylbenzene	mg/l	0.0219	0	.025	87.7	32-149	L495201-01	WG514918
Styrene	mg/l	0.0258	0	.025	103.	38-149	L495201-01	WG514918
tert-Butylbenzene	mg/l	0.0221	0	.025	88.3	36-149	L495201-01	WG514918
Tetrachloroethene	mg/l	0.0534	0.0430	.025	41.7	13-157	L495201-01	WG514918
Toluene	mg/l	0.0181	0	.025	72.6	22-152	L495201-01	WG514918
trans-1,2-Dichloroethene	mg/l	0.0138	0	.025	55.3	11-160	L495201-01	WG514918
trans-1,3-Dichloropropene	mg/l	0.0225	0	.025	89.9	33-153	L495201-01	WG514918
Trichloroethene	mg/l	0.0181	0	.025	72.6	18-163	L495201-01	WG514918
Trichlorofluoromethane	mg/l	0.0146	0	.025	58.2	10-177	L495201-01	WG514918
Vinyl chloride	mg/l	0.0117	0	.025	46.7	0-179	L495201-01	WG514918
Xylenes, Total	mg/l	0.0626	0	.075	83.5	27-151	L495201-01	WG514918
4-Bromofluorobenzene					102.1	75-128		WG514918
Dibromofluoromethane					97.30	79-125		WG514918
Toluene-d8					102.3	87-114		WG514918

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Level II

December 28, 2010

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Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0243	0.0227	97.2	45-152	6.61	21	L495201-01	WG514918
1,1,1-Trichloroethane	mg/l	0.0182	0.0174	72.8	31-161	4.56	23	L495201-01	WG514918
1,1,2,2-Tetrachloroethane	mg/l	0.0285	0.0266	114.	49-149	6.74	22	L495201-01	WG514918
1,1,2-Trichloroethane	mg/l	0.0259	0.0247	104.	46-145	4.80	20	L495201-01	WG514918
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0144	0.0144	57.8	14-168	0.100	24	L495201-01	WG514918
1,1-Dichloroethane	mg/l	0.0189	0.0189	75.5	30-159	0.240	21	L495201-01	WG514918
1,1-Dichloroethene	mg/l	0.0132	0.0131	52.9	10-162	1.15	23	L495201-01	WG514918
1,1-Dichloropropene	mg/l	0.0158	0.0154	63.0	14-162	2.04	23	L495201-01	WG514918
1,2,3-Trichlorobenzene	mg/l	0.0265	0.0238	106.	32-143	10.6	33	L495201-01	WG514918
1,2,3-Trichloropropane	mg/l	0.0272	0.0252	109.	48-148	7.68	23	L495201-01	WG514918
1,2,3-Trimethylbenzene	mg/l	0.0229	0.0212	91.7	36-141	7.88	25	L495201-01	WG514918
1,2,4-Trichlorobenzene	mg/l	0.0249	0.0232	99.7	27-142	7.21	30	L495201-01	WG514918
1,2,4-Trimethylbenzene	mg/l	0.0224	0.0207	89.6	29-153	8.00	27	L495201-01	WG514918
1,2-Dibromo-3-Chloropropane	mg/l	0.0269	0.0247	107.	37-148	8.33	27	L495201-01	WG514918
1,2-Dibromoethane	mg/l	0.0236	0.0227	94.6	41-149	3.86	21	L495201-01	WG514918
1,2-Dichlorobenzene	mg/l	0.0246	0.0232	98.6	40-139	6.12	23	L495201-01	WG514918
1,2-Dichloroethane	mg/l	0.0187	0.0182	75.0	29-167	2.99	21	L495201-01	WG514918
1,2-Dichloropropane	mg/l	0.0224	0.0217	89.6	39-148	3.25	20	L495201-01	WG514918
1,3,5-Trimethylbenzene	mg/l	0.0222	0.0208	88.7	33-149	6.27	26	L495201-01	WG514918
1,3-Dichlorobenzene	mg/l	0.0246	0.0239	98.6	32-148	3.23	24	L495201-01	WG514918
1,3-Dichloropropane	mg/l	0.0243	0.0232	97.4	44-142	4.82	20	L495201-01	WG514918
1,4-Dichlorobenzene	mg/l	0.0233	0.0225	93.1	32-136	3.53	23	L495201-01	WG514918
2,2-Dichloropropane	mg/l	0.0185	0.0170	74.0	14-158	8.64	23	L495201-01	WG514918
2-Butanone (MEK)	mg/l	0.118	0.113	94.8	32-151	4.61	26	L495201-01	WG514918
2-Chloroethyl vinyl ether	mg/l	0.000438	0.000375	0.350	0-175	15.4	75	L495201-01	WG514918
2-Chlorotoluene	mg/l	0.0229	0.0220	91.7	35-147	4.31	24	L495201-01	WG514918
4-Chlorotoluene	mg/l	0.0230	0.0224	91.9	33-147	2.63	25	L495201-01	WG514918
4-Methyl-2-pentanone (MIBK)	mg/l	0.124	0.114	99.0	40-160	8.09	28	L495201-01	WG514918
Acetone	mg/l	0.109	0.106	87.5	25-157	3.30	26	L495201-01	WG514918
Acrolein	mg/l	0.501	0.503	401.*	0-179	0.450	39	L495201-01	WG514918
Acrylonitrile	mg/l	0.127	0.123	101.	37-162	2.87	24	L495201-01	WG514918
Benzene	mg/l	0.0177	0.0173	70.8	16-158	2.20	21	L495201-01	WG514918
Bromobenzene	mg/l	0.0229	0.0221	91.6	37-147	3.79	23	L495201-01	WG514918
Bromodichloromethane	mg/l	0.0225	0.0218	90.0	45-147	3.36	20	L495201-01	WG514918
Bromoform	mg/l	0.0266	0.0250	106.	38-152	6.20	20	L495201-01	WG514918
Bromomethane	mg/l	0.0153	0.0140	61.1	0-191	8.92	35	L495201-01	WG514918
Carbon tetrachloride	mg/l	0.0165	0.0160	66.2	22-168	3.06	24	L495201-01	WG514918
Chlorobenzene	mg/l	0.0232	0.0226	92.6	33-148	2.66	22	L495201-01	WG514918
Chlorodibromomethane	mg/l	0.0244	0.0231	97.7	48-151	5.53	21	L495201-01	WG514918
Chloroethane	mg/l	0.0131	0.0142	52.5	4-176	7.59	27	L495201-01	WG514918
Chloroform	mg/l	0.0200	0.0195	79.9	37-147	2.36	21	L495201-01	WG514918
Chloromethane	mg/l	0.0117	0.0117	46.9	10-174	0.470	28	L495201-01	WG514918
cis-1,2-Dichloroethene	mg/l	0.0189	0.0187	75.8	29-156	1.32	22	L495201-01	WG514918
cis-1,3-Dichloropropene	mg/l	0.0225	0.0216	89.9	35-148	4.20	21	L495201-01	WG514918
Di-isopropyl ether	mg/l	0.0207	0.0205	83.0	39-160	1.11	21	L495201-01	WG514918
Dibromomethane	mg/l	0.0211	0.0198	84.3	36-152	6.37	20	L495201-01	WG514918
Dichlorodifluoromethane	mg/l	0.0105	0.0111	41.8	0-200	5.47	26	L495201-01	WG514918
Ethylbenzene	mg/l	0.0215	0.0205	85.8	29-150	4.49	24	L495201-01	WG514918
Hexachloro-1,3-Butadiene	mg/l	0.0256	0.0231	102.	28-144	10.2	33	L495201-01	WG514918
Isopropylbenzene	mg/l	0.0208	0.0201	83.2	35-147	3.58	25	L495201-01	WG514918
Methyl tert-butyl ether	mg/l	0.0207	0.0199	82.7	24-167	3.95	22	L495201-01	WG514918
Methylene Chloride	mg/l	0.0180	0.0174	72.0	23-151	3.59	21	L495201-01	WG514918
n-Butylbenzene	mg/l	0.0215	0.0202	86.2	22-151	6.20	29	L495201-01	WG514918
n-Propylbenzene	mg/l	0.0221	0.0214	88.5	26-150	3.20	25	L495201-01	WG514918
Naphthalene	mg/l	0.0254	0.0230	102.	24-160	10.2	37	L495201-01	WG514918
p-Isopropyltoluene	mg/l	0.0225	0.0214	90.2	28-151	5.33	27	L495201-01	WG514918
sec-Butylbenzene	mg/l	0.0231	0.0219	92.4	32-149	5.17	26	L495201-01	WG514918
Styrene	mg/l	0.0282	0.0258	113.	38-149	8.75	23	L495201-01	WG514918
tert-Butylbenzene	mg/l	0.0236	0.0221	94.4	36-149	6.75	26	L495201-01	WG514918
Tetrachloroethene	mg/l	0.0565	0.0534	53.9	13-157	5.53	24	L495201-01	WG514918

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Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Toluene	mg/l	0.0193	0.0181	77.0	22-152	5.98	22	L495201-01	WG514918
trans-1,2-Dichloroethene	mg/l	0.0141	0.0138	56.6	11-160	2.25	23	L495201-01	WG514918
trans-1,3-Dichloropropene	mg/l	0.0234	0.0225	93.6	33-153	3.97	22	L495201-01	WG514918
Trichloroethene	mg/l	0.0194	0.0181	77.6	18-163	6.75	21	L495201-01	WG514918
Trichlorofluoromethane	mg/l	0.0147	0.0146	58.9	10-177	1.12	24	L495201-01	WG514918
Vinyl chloride	mg/l	0.0117	0.0117	47.0	0-179	0.620	26	L495201-01	WG514918
Xylenes, Total	mg/l	0.0646	0.0626	86.2	27-151	3.17	23	L495201-01	WG514918
4-Bromofluorobenzene				100.8	75-128				WG514918
Dibromofluoromethane				97.69	79-125				WG514918
Toluene-d8				102.8	87-114				WG514918

Batch number /Run number / Sample number cross reference

WG514918: R1516950: L495201-01 02 03 04 05 06 07

* * Calculations are performed prior to rounding of reported values.
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Company Name/Address:
Stantec Consulting - ~~Tualatin~~, Portland OR

~~7730 SW Mohawk Street~~ 9400 SW Barnes Rd St 200
~~Tualatin, OR 97062~~ Portland OR

Alternate billing information:

Report to: Amy Zach
Email to: Ross.Simmons@Stantec.com amy.zach@stantec.com

Project Description: Brunswick Bayliner Marine 4Q10
City/State Collected: Arlington, WA

Phone: (503) ~~691-2030~~ 297-1631
FAX: (503) ~~692-7074~~ 297-5427
Client Project #: 190402126
ESC Key:

Collected by: Janet Nash
Site/Facility ID#:
P.O.#:

Collected by (signature): Janet Nash
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%
Three Day.....25%

Date Results Needed: Std TAT
Email? __No X Yes
FAX? __No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260 40ml - HCl	V8260 - Trip Blank 40ml - HCl-Bl					Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW	--	12-21-10	1125	3	X							L495201-01
MW-2	Grab	GW	--	12-21-10	1105	3	X							02
MW-3	Grab	GW	--	12-21-10	0910	3	X							03
MW-4	Grab	GW	--	12-21-10	1040	3	X							04
MW-5	Grab	GW	--	12-21-10	0955	3	X							05
MW-6	Grab	GW	--	12-21-10	0935	~~3~~ 2	X							06
MW-7	Grab	GW	--	12-21-10	1015	3	X							07
TB-1	Grab	GW	--	--	--	~~1~~ 0		X						

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____

4355929587 Flow _____ Other _____

Chain of Custody Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859
F235

CoCode: SECORTOR (lab use only)
Template/Prelogin 823 12/22
Shipped Via:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Janet Nash	12/22/10	1500	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 2.1° | Bottles Received: 20

Date: 12/23/10 | Time: 0900

Condition: (lab use only)

CoC Seals Intact ✓ Y ___ N ___ NA

pH Checked: | NCF: ✓

ESC
L·A·B S·C·I·E·N·C·E·S

NON-CONFORMANCE FORM

Login No.: L495201

Date: 12/23/10

Evaluated by: Jeremy Watkins

Client: SECOR TOR

Non-Conformance (check applicable items)

- ☐ Parameter(s) past holding time
- ☐ Improper temperature
- ☐ Improper container type
- ☐ Improper preservation
- ☐ Container lid not intact
- ☐ Login Clarification Needed
- ☐ Chain of custody is incomplete
- ☐ Chain of Custody is missing (see below)
- (1) ☑ Broken container(s) (See below)
- (2) ☑ Broken container: sufficient sample volume remains for analysis requested (See below)

If no COC: Received by_____

Date:_____ Time:_____

Temp:____ Cont. Rec_____ pH:_____

☐ Fedex ☐ UPS ☐ SWA ☐ Other_____

Tracking # _____

- ☐ Insufficient packing material around container
- ☐ Insufficient packing material inside cooler
- ☐ Improper handling by carrier (FedEx / UPS / Courier
- ✓ Sample was frozen

Comments: (1) Received TRIP-1 broken / Frozen

(2) Received 1 Vial for MW-6 broken / Frozen. 2 remain

Login Instructions: TSR Initials: JW

Client informed by call / email / fax / (voice mail) date: 12/23 time: 1405

Client contact: Amy Zach - left VM @ 1405 on 12/23

- Client informed via VM.